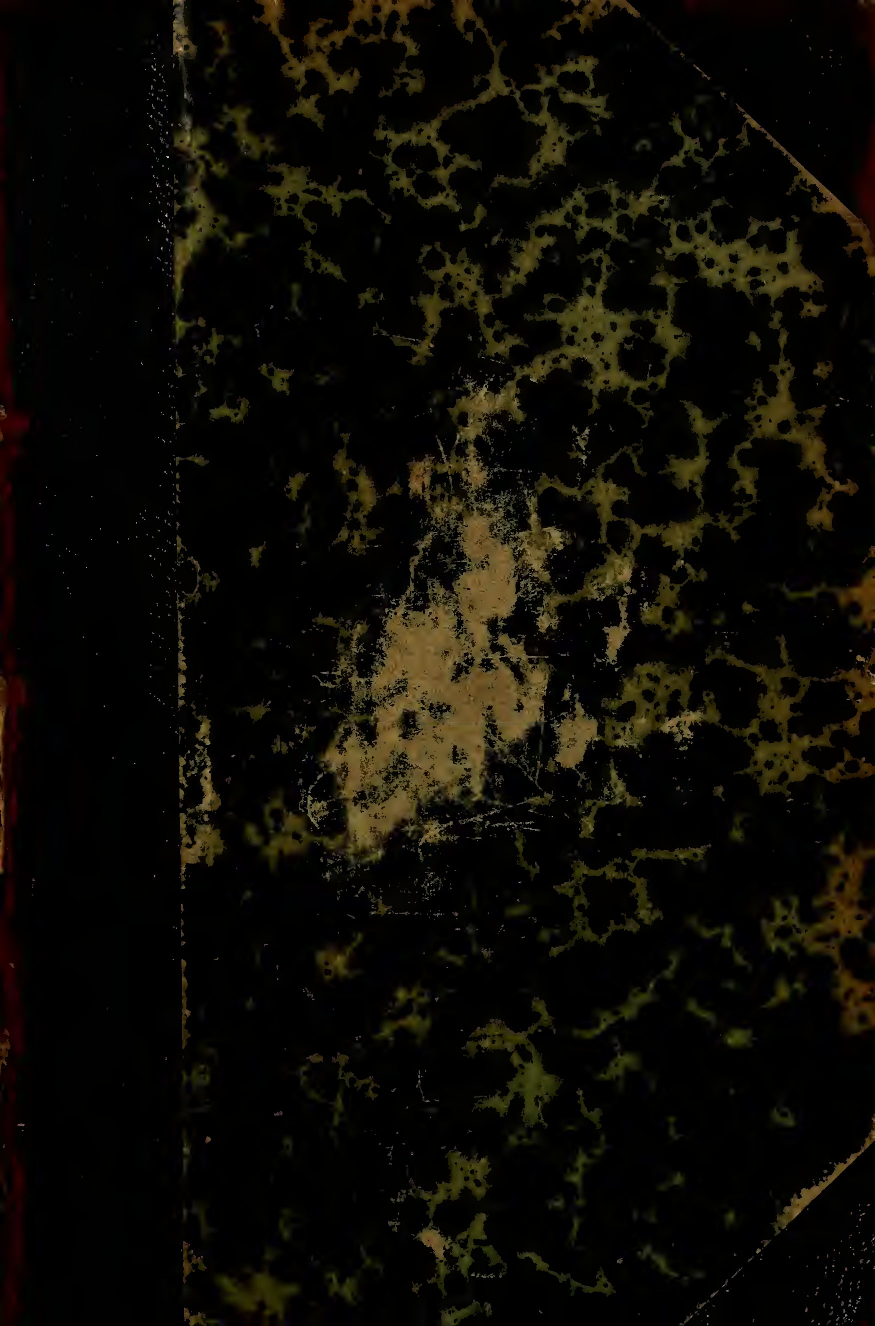


No.

BOSTON
MEDICAL LIBRARY
ASSOCIATION,

19 BOYLSTON PLACE.

ONE HUNDREDTH

ANNUAL CATALOGUE

OF THE

MEDICAL SCHOOL

(BOSTON)

OF

HARVARD UNIVERSITY.

1882-83.

[*Reprinted from the Catalogue of the University.*]

CAMBRIDGE:
PUBLISHED BY CHARLES W. SEVER,
University Bookstore.
1882.

University Press:
John Wilson and Son, Cambridge.

THE MEDICAL SCHOOL.

BOSTON.

INSTRUCTION in this School is given by lectures, recitations, clinical teaching, and practical exercises, uniformly distributed throughout the academic year. The year begins on the Thursday following the last Wednesday in September,* and ends on the last Wednesday in June. There is a recess at Christmas, beginning December 23, and ending January 2; and a spring recess, beginning on the Wednesday before Fast Day, and ending on the following Tuesday, inclusive.

The course of instruction has been greatly enlarged, and is so arranged as to carry the student progressively and systematically from one subject to another, in a just and natural order.

In the subjects of anatomy, histology, chemistry, and pathological anatomy, laboratory-work is substituted for, or added to, the usual didactic lectures, and is as much required of every student as attendance at lectures and recitations.

The course of study recommended by the Faculty covers four years, but until further notice the degree of Doctor of Medicine will continue to be given upon the completion of three years of study, to be as ample and full as heretofore. The degree of Doctor of Medicine *cum laude* will be given to candidates who have pursued a complete four years' course, and obtained an average of 75 per cent. in all the examinations of this course. In addition to the ordinary degree of Doctor of Medicine as heretofore obtained, a certificate of attendance on the studies of the fourth year will be given to such students desiring it as shall have attended the course, and have passed a satisfactory examination in the studies of the same.

Instead of the customary oral examination for the degree of Doctor of Medicine, held at the end of the three and four years' period of study, a series of written examinations on all the main subjects of medical instruction has been distributed for regular students through their entire course of study. Every candidate for the degree must pass a satisfactory examination in every one of the principal departments of medical instruction, at some time during his period of study.

---

* That the time of study shall count as a full term, students must present themselves within the first week of the term.

Members of any one department of Harvard University have a right to attend lectures and recitations in any other department, without paying additional fees. Students in the Medical School who wish to avail themselves of this opportunity of pursuing scientific or other studies, may do so without loss of time counted as medical study, to such extent and in such manner as the Medical Faculty shall in each case prescribe. Undergraduates intending to study medicine are advised to pay special attention to the study of Natural History, Chemistry, Physics, and the French and German languages, while in College.

FACULTY.

CHARLES W. ELIOT, LL.D., *President.*
CALVIN ELLIS, M.D., *Dean, and Jackson Professor of Clinical Medicine.*
OLIVER W. HOLMES, M.D., LL.D., *Parkman Professor of Anatomy.*
HENRY J. BIGELOW, M.D., *Professor of Surgery, Emeritus.*
FRANCIS MINOT, M.D., *Hersey Professor of the Theory and Practice of Physic.*
JOHN P. REYNOLDS, M.D., *Professor of Obstetrics.*
HENRY W. WILLIAMS, M.D., *Professor of Ophthalmology.*
DAVID W. CHEEVER, M.D., *Professor of Surgery.*
JAMES C. WHITE, M.D., *Professor of Dermatology.*
ROBERT T. EDES, M.D., *Professor of Materia Medica.*
HENRY P. BOWDITCH, M.D., *Professor of Physiology.*
CHARLES F. FOLSOM, M.D., *Assistant Professor of Mental Diseases.*
FREDERICK I. KNIGHT, M.D., *Assistant Professor of Laryngology.*
CHARLES B. PORTER, M.D., *Assistant Professor in Surgery.*
J. COLLINS WARREN, M.D., *Assistant Professor in Surgery.*
REGINALD H. FITZ, M.D., *Shattuck Professor of Pathological Anatomy.*
WILLIAM L. RICHARDSON, M.D., *Assistant Professor of Obstetrics.*
THOMAS DWIGHT, M.D., *Instructor in Topographical Anatomy and Histology.*
EDWARD S. WOOD, M.D., *Professor of Chemistry.*
WILLIAM H. BAKER, M.D., *Assistant Professor of Gynaecology.*
WILLIAM B. HILLS, M.D., *Instructor in Chemistry.*
WILLIAM F. WHITNEY, M.D., *Curator of the Anatomical Museum.*

OTHER INSTRUCTORS.

FRANK W. DRAPER, M.D., *Lecturer on Forensic Medicine.*
HENRY P. QUINCY, M.D., *Assistant in Histology.*
EDWARD N. WHITTIER, M.D., *Instructor in the Theory and Practice of Physic.*

FRANCIS A. HARRIS, M.D., *Demonstrator of Medico-legal Examinations.*
WILLIAM P. BOLLES, M.D., *Instructor in Materia Medica.*
EDWARD H. BRADFORD, M.D., *Assistant in Clinical Surgery.*
W. STURGIS BIGELOW, M.D., *Assistant in Surgery.*
FRANCIS H. DAVENPORT, M.D., *Assistant in Gynaecology.*
GEORGE M. GARLAND, M.D., *Assistant in Clinical Medicine.*
JOSEPH W. WARREN, M.D., *Assistant in Physiology.*
MAURICE H. RICHARDSON, M.D., *Demonstrator of Anatomy.*
WILLIAM W. GANNETT, M.D., *Assistant in Pathological Anatomy.*
CHARLES S. MINOT, S.D., *Lecturer on Embryology.*
WILLIAM C. EMERSON, M.D., *Assistant in Chemistry.*
SAMUEL J. MIXTER, M.D., *Assistant in Anatomy.*
WALTER J. OTIS, M.D., *Assistant in Anatomy.*

The following gentlemen will give special clinical instruction : —

JOHN HOMANS, M.D., *in the Diagnosis and Treatment of Ovarian Tumors.*
FRANCIS B. GREENOUGH, M.D., and ABNER POST, M.D., *in Syphilis.*
OLIVER F. WADSWORTH, M.D., *in Ophthalmoscopy.*
J. ORNE GREEN, M.D., and CLARENCE J. BLAKE, M.D., *in Otology.*
AMOS L. MASON, M.D., and FREDERICK C. SHATTUCK, M.D., *in Auscultation.*
JOSEPH P. OLIVER, M.D., and THOMAS M. ROTCH, M.D., *in Diseases of Children.*
SAMUEL G. WEBBER, M.D., and JAMES J. PUTNAM, M.D., *in Diseases of the Nervous System.*
JAMES R. CHADWICK, M.D., *in Diseases of Women.*

The Medical College is on North Grove Street, Boston, and the address of the Secretary is Dr. R. H. FITZ, 18 Arlington St., Boston.

STUDENTS.

Course for Graduates.

Baxter, Edward Hooker, A.B. (*Middlebury Coll.*), M.D. (*Univ. of Vt.*),	*Middlebury, Vt.*
Blair, Israel Alison, A.B. (*Acadia Coll.*), M.D. (*Dart. Med. Coll.*),	*Boston.*
Daniels, Edward Alfred, M.D.,	*Medway.*
Hilton, George Victor, M.D. (*Detroit Med. Coll.*),	*S. Haven, Mich.*
Holmes, William Dennison, M.D.,	*Boston.*
King, Charles Lee, M.D. (*Chicago Med. Coll.*),	*Hillsdale, Mich.*
Mayberry, Edwin Nelson, M.D. (*Dart. Coll.*),	*Weston.*
Read, George Mumford, M.D.,	*Providence, R. I.*
Terry, Charles Church, M.D. (*N. Y. Med. Coll.*),	*Fall River.*
Watson, Francis Sedgwick, A.B., M.D.,	*Boston.*

Fourth Class.

Bell, Robert,	*Boston.*
Conant, William Merritt, A.B.,	*Bridgewater.*
Devine, William Henry,	*Boston.*
Dunn, Charles Stein,	*Dover, N. H.*
Johnson, Frank Mackie, S.B. (*Amherst Coll.*),	*Norwich, Conn.*
Kimball, George Morrill, A.B. (*Yale Coll.*),	*Concord, N. H.*
Newhall, Herbert William, A.B.,	*Lynn.*
Richards, George Edward, A.B.,	*Cambridge.*
Smith, Asbury Gilbert,	*Stoneham.*
Welch, Stephen Albro, A.B. (*Brown Univ.*),	*Warren, R. I.*

Third Class.

Aldrich, Albert Clinton, A.B.,	*Somerville.*
Atwood, Charles Augustus,	*Taunton.*
Ayer, Silas Hibbard,	*Chelsea.*
Baldwin, Henry Cutler, A.B.,	*Somerville.*
Barstow, Henry Taylor, A.B.,	*Boston.*
Bowen, John Templeton, A.B.,	*Boston.*
Brown, Daniel Joseph,	*Milford.*
Buckley, Philip Townsend, A.B.,	*Boston.*
Carll, Walter Edward,	*Greenfield.*
Chase, George Thorndike, A.B.,	*Salem.*
Clark, Arthur Wellington,	*Lawrence.*
Coggeshall, Henry Tisdale,	*Newport, R. I.*
Cogswell, Charles Hale, A.B. (*Dart. Coll.*),	*N. Easton.*
Cole, Ralph Marcus,	*Middletown, Conn.*
Couch, Joseph Daniel,	*Boston.*

Cutts, Harry Madison, A.B. (*Coll. of N. J.*),	*Washington, D. C.*
Daniels, Frank Herbert, A.B.,	*Boston.*
Donovan, Michael Ricard, A.B. (*Georgetown Coll.*),	*Lynn.*
Field, James Brainerd, A.B.,	*Boston.*
Finnigan, Patrick Joseph, A.B. (*Holy Cross Coll.*),	*Worcester.*
Foster, Charles Chauncy, A.B.,	*Cambridge.*
French, George Morrill, A.B. (*Boston Univ.*),	*Cambridge.*
Friend, Walter Morrison, A.B. (*Tufts Coll.*),	*Gloucester.*
Fuller, Eugene, A.B.,	*Cambridge.*
Gage, James Arthur, A.M.,	*Lowell.*
Grimm, Charles Henry,	*San Francisco, Cal.*
Guitéras, Ramon Benjamin,	*Bristol, R. I.*
Hall, Newbert Jackson,	*Boston.*
Hall, William Dudley, A.B.,	*Bridgeport, Conn.*
Heustis, James Walter,	*Boston.*
Holden, Francis Marion,	*Boston.*
Hooker, Edward Dwight,	*Cambridge.*
Jack, Frederick Lafayette,	*Boston.*
Jackson, Henry, A.B.,	*Boston.*
Keith, Wallace Cushing, A.B. (*Amherst Coll.*),	*Campello.*
Kemble, Laurence Grafton,	*Salem.*
Kilburn, Henry Whitman, A.B.,	*Lowell.*
Knowles, William Fletcher, Jr.,	*Cambridge.*
Lincoln, Arthur Talbot, S.B. (*Amherst Coll.*),	*Dennysville, Me.*
Lincoln, John Clifford,	*Norton.*
McDonald, Rufus Cyrene,	*Brookline.*
Nash, George William, A.B.,	*Cambridge.*
Pfeiffer, Oscar Joseph, A.B. (*Dart. Coll.*),	*Portsmouth, N. H.*
Pigeon, James Cogswell Du Maresque, A.M. (*Coll. of N. J.*),	*Derry, N. H.*
Ripley, Frederick Jerome, A.B. (*Dart. Coll.*),	*N. Easton.*
Round, Arthur Morey, PH.B. (*Brown Univ.*),	*Norton.*
Scofield, Columbus Sewell,	*Wilbraham.*
Simpson, Charles Edward,	*Lowell.*
Stetson, Hayward, A.B.,	*Bangor, Me.*
Stevens, William Stanford, A.B.,	*Boston.*
Stone, Eugene Potter,	*Boisé Barracks, Idaho.*
Symonds, Benjamin Ropes, Jr.,	*Salem.*
Taylor, Charles Warren,	*Lowell.*
Tremaine, William Allen,	*Waterbury, Conn.*
Warren, Charles Everett, A.B.,	*Boston.*
Webster, Charles Edward,	*Binghamton, N. Y.*
Wood, Leonard,	*Pocasset.*
Worcester, Alfred, A.M.,	*Waltham.*

Second Class.

Abbe, Alanson Joseph, A.B.,	*Dorchester.*
Anderson, William Herman,	*N. Woburn.*
Boardman, William Sydney, A.B. (*Amherst Coll.*),	*Newburyport.*
Boyd, Samuel George,	*Nassau, Bahamas.*
Brown, Frank Dillon, A.B. (*Louisville High School*),	*Louisville, Ky.*
Brown, Wilfred Gardner,	*Leicester.*
Burgess, Oliver Graham,	*Boston.*
Burt, Frank Leslie, PH.B. (*Tufts Coll.*),	*Adams.*
Byrne, William James Edward,	*Boston.*
Colburn, Willis William,	*Boston.*
Cole, George Edward,	*Sheboygan, Wis.*
Conlan, James Francis,	*Cambridge.*
Conlan, Simon Bernard, A.B. (*Holy Cross Coll.*),	*Cambridge.*
Coolidge, Algernon, Jr., A.B.,	*Boston.*
Copp, Owen, A.B. (*Dart. Coll.*),	*Methuen.*
Cordeiro, Frederic Joaquim Barbosa, A.B.,	*Boston.*
Craig, Sydney Morgan,	*Pittsburgh, Pa.*
Currier, George Washington,	*Lawrence.*
DeLand, Charles Airmet,	*Warren.*
Dunham, Edward Kellogg, B.PH. (*Columbia Coll.*),	*Irvington, N. Y.*
Durant, Charles Edwin,	*Haverhill.*
Faulkner, Herbert Kimball,	*Keene, N. H.*
Fernald, Frank Clinton, A.B.,	*Philadelphia, Pa.*
Gates, George Wellesley,	*Brookline.*
Gerry, George Henry,	*Lowell.*
Gifford, John Henry, A.B. (*Haverford Coll.*),	*Fall River.*
Gleeson, William Joseph,	*Boston.*
Gordon, Stephen Masury,	*Beverly.*
Greenleaf, Robert Willard, A.B.,	*Boston.*
Holcombe, Charles Henry,	*Milford, N. H.*
Howard, Herbert Burr, A.B.,	*Bellows Falls, Vt.*
Howe, Oliver Hunt,	*Dedham.*
Hussey, Frederick Daniel,	*Boston.*
Hyland, Jesse Burdette,	*Keene, N. H.*
Jeffries, John Amory, A.B.,	*Boston.*
Jelly, Arthur Carlton, A.B.,	*Sacramento, Cal.*
Klinghammer, William Jerome, A.B. (*Tufts Coll.*),	*Somerville.*
Lane, Edward Binney, A.B.,	*Cambridge.*
Lovett, Robert Williamson, A.B.,	*Boston.*
Lux, Frederick William,	*San Francisco, Cal.*
MacDonald, William Gregory, A.B. (*Boston Coll.*),	*Boston.*
MacKaye, Henry Goodwin, A.B.,	*Boston.*

McOwen, Timothy Edward,	*Lowell.*
Merrill, Edward Roscoe, A.B.,	*Andover.*
Munro, Walter Lee, A.M. (*Brown Univ.*),	*Bristol, R. I.*
Munroe, John Cummings, A.B.,	*Lexington.*
Noyes, William, Jr., A.B.,	*Malden.*
Phillips, Jerrie Knowlton,	*Bangor, Me.*
Potter, Silas Allen, A.B.,	*Boston.*
Pratt, Jonathan Washburn, PH.G. (*Mass. Coll. Pharm.*),	*Boston.*
Prescott, William Herbert,	*Concord.*
Reynolds, Edward, A.B.,	*Boston.*
Richardson, William Shedd,	*Sturbridge.*
Sanford, Abbott, A.M. (*Amherst Coll.*),	*E. Bridgewater.*
Schram, Charles, A.B. (*Yale Coll.*),	*Milwaukee, Wis.*
Sears, George Gray, A.B. (*Amherst Coll.*),	*Boston.*
Spring, Clarence Walter, A.B. (*Dart. Coll.*),	*Lebanon, N. H.*
Stearns, Charles A, A.B. (*Amherst Coll.*),	*Boston.*
Strong, Frederick Emerson,	*Lancaster, Wis.*
Stuart, Frederic William, A.B.,	*Boston.*
Supple, Bernard Francis,	*Boston.*
Swan, William Donnison, A.B.,	*Cambridge.*
Swift, Robert, B.S.,	*Boston.*
Taft, Charles Ezra,	*Dedham.*
Talbot, Ambrose, Jr., A.B.,	*Everett.*
Thissell, Joseph Abbott,	*Beverly.*
Townsend, Charles Wendell, A.B.,	*Boston.*
Tucker, Ernest Fanning, A.B. (*Swarthmore Coll.*),	*New York, N. Y.*
Twitchell, Edward Thayer,	*Keene, N. H.*
Tyler, Waldo Henry,	*Holliston.*
Warriner, Myron Anson,	*Warren.*
Watson, Willis, A.B.,	*Boston.*
Wellington, Charles Berwick,	*Cambridge.*

First Class.

Babcock, James Woods, A.B.,	*Chester, S. C.*
Bidwell, Walter Davidson, A.B. (*Williams Coll.*),	*Hyde Park.*
Blodgett, George Albert,	*Dorchester, N. H.*
Boyden, Franklin Edward, PH.G. (*Mass. Coll. Pharm.*),	*Medfield.*
Breck, Samuel, B.S. (*Columbian Univ.*),	*Fort Snelling, Minn.*
Brigham, Frank Fontelle, A.B. (*Brown Univ.*),	*Westboro'.*
Bullock, Edwin Warren,	*Wellesley.*
Carroll, John Aloysius, A.B. (*Holy Cross Coll.*),	*Worcester.*
Chase, Heman Lincoln, Jr., A.B.,	*Brookline.*

Cheney, Frederick Edward,	*Rutland, Vt.*
Clark, George Stillman,	*Hardwick.*
Clark, Joseph Payson, A.B.,	*Boston.*
Cochrane, John McGregor, A.B.,	*Cambridge.*
Collins, David Aloysius,	*Boston.*
Crockett, Montgomery Adams, A.B.,	*Medford.*
Crowell, Samuel,	*Dennis.*
Davis, Myron Henry,	*Belchertown.*
Delaney, Richard, A.B.,	*Woodville.*
Dunham, Carroll, Jr.,	*Irvington, N. Y.*
Durand, Henry Strong, A.B. (*Yale Coll.*),	*Rochester, N. Y.*
Dwyer, John Edward,	*Cambridge.*
Eaton, Franklin Maynard, A.B. (*Yale Coll.*),	*St. Stephens, N. B.*
Eldridge, David Gorham, Jr.,	*Yarmouth.*
Fiske, William Boyd, A.B.,	*Cambridge.*
Foley, Walter James Paul,	*Boston.*
Foster, Burnside, A.B. (*Yale Coll.*),	*Boston.*
Francis, George Hills, A.B.,	*Brookline.*
Gage, Homer, A.B.,	*Worcester.*
Gavin, George Freeborn,	*Dublin, Ireland.*
Gillespie, John, A.B.,	*Malden.*
Gleason, William Francis,	*Milford.*
Graves, Charles Burr, A.B. (*Yale Coll.*),	*New London, Conn.*
Haslam, Frank Alden,	*Boston.*
Holden, Austin,	*Cambridge.*
Holmes, Henry Elmer,	*Boston.*
Hooper, Charles Russell,	*Boston.*
Hughes, Henry West, A.M. (*Univ. of Va.*),	*Little Rock, Ark.*
Jones, Charles Dana,	*Milton, N. H.*
Jones, Henry Martin, B.S. (*Lewis Coll.*),	*Kingston.*
La Due, Elmer John,	*Boston.*
Lawrence, Frank Pere,	*Worcester.*
Leavitt, Byron Charles, A.B. (*Dart. Coll.*),	*Saco, Me.*
Leonard, Charles Gale, A.B. (*Tufts Coll.*),	*Somerville.*
Locke, Horace Mann,	*Lockeford, Cal.*
Louis, Isaac,	*Boston.*
Lovitt, Israel Melbourne,	*Yarmouth, N. S.*
Lowe, Fred Messenger, A.B. (*Yale Coll.*),	*Cambridge.*
Lyman, Charles Baldwin,	*Salem.*
Manning, Charles Bolles, 2d,	*Rockport.*
McDonald, Edward Valentine, A.B.,	*Fall River.*
McGowan, John Dennis,	*Boston.*
McLaughlin, Joseph Ignatius, A.B. (*Boston Coll.*),	*Boston.*
Milinowski, Paul Louis Arthur,	*Berlin, Prussia.*

Mitchell, John Singleton,	*Boston.*
Morrill, Fred Hiram,	*Nashua, N. H.*
Murphy, Frank Charles,	*Taunton.*
Murphy, Joseph Patrick,	*Boston.*
O'Donnell, Francis Michael, A.B. (*Boston Coll.*),	*Marlboro'.*
O'Donnell, William,	*Boston.*
Parsons, Frank Sears,	*Northampton.*
Perkins, John Walter, A.B.,	*Hyde Park.*
Perry, Arthur Pedro,	*Boston.*
Richardson, Benjamin Franklin,	*Middleton.*
Richardson, Walter Jay, A.B. (*Amherst Coll.*),	*Glencoe, Minn.*
Robbins, James Clarke,	*Bristol, R. I.*
Roe, Edward Drake, Jr., A.B. (*Syracuse Univ.*),	*Elmira, N. Y.*
Shepard, John Woodruff, A.B. (*Yale Coll.*),	*Hartford, Conn.*
Simmons, Gustavus Crocker,	*Sacramento, Cal.*
Smith, Hiram Fred Markley, B.S. (*Mass. Ag. Coll.*),	*N. Hadley.*
Stone, Charles Sinclair,	*Boston.*
Sweeney, Arthur Ambrose, A.B. (*St. John's Coll., N. Y.*),	*Lawrence.*
True, Herbert Osgood,	*Antrim, N. H.*
Tuttle, Karl Rand,	*Watertown.*
Twombly, Edward Lambert, A.B. (*Yale Coll.*),	*Boston.*
Ward, George Otis, A.M. (*Brown Univ.*),	*Worcester.*
Washburn, George Hamlin, A.B. (*Amherst Coll.*),	*Middleboro'.*
Williams, Charles Crosby, PH.G. (*Mass. Coll. Pharm.*),	*Boston.*
Woodbury, Frederick Clinton, A.B.,	*Boston.*

SUMMARY.

Graduates' Course	10
Fourth Class	10
Third Class	58
Second Class	73
First Class	78
Total	229

THE MEDICAL SCHOOL.

REQUISITES FOR ADMISSION.

All candidates for admission, excepting those who have passed an examination for admission to Harvard College, must present a degree in Letters or Science from a recognized college or scientific school, or pass an examination, on the Monday preceding the last Wednesday in June or September, at 10 A.M., in the following subjects:—

1. English. Every candidate shall be required to write, legibly and correctly, an English composition of not less than two hundred words, and also to write English prose from dictation.

2. Latin. The translation of easy Latin prose.

3. Physics. A competent knowledge of Physics (such as may be obtained from Balfour Stewart's Elements of Physics).

4. Elective Subject. Each candidate shall pass an approved examination in such one of the following branches as he may elect: French, German, the Elements of Algebra or of Plane Geometry, Botany.

Whenever the candidate shall give evidence of having passed a satisfactory examination in any of the above requirements either at Harvard College or at the Lawrence Scientific School, a subsequent examination in such subjects will not be demanded for his admission to the Medical School.

The examinations will be conducted in writing, and specimens of the papers used will be sent on application to the Secretary. In judging the work of the candidate, the spelling, grammar, and construction will be considered.

Graduates in medicine will not be required to pass this examination on joining the school.

No student becomes a member of the school until he has registered his name with the Secretary of the Faculty.

DIVISION OF STUDIES.

Four Years' Course.

For the First Year.—Anatomy, Physiology, and General Chemistry.*

---

* Any student who shall have previously passed in the Undergraduate department or Scientific School of Harvard University an examination in General Chemistry (including qualitative analysis) will be exempt from examination in this branch, and may pursue the study of Medical Chemistry during his first year. The latter privilege will be granted to students from other colleges and scientific schools who have received instruction in gen-

For the Second Year. — Practical and Topographical Anatomy, Medical Chemistry, Materia Medica, Pathological Anatomy, Clinical Medicine, Surgery, and Clinical Surgery.

For the Third Year. — Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

For the Fourth Year. — Ophthalmology, Otology, Dermatology, Syphilis, Laryngology, Mental Diseases, Diseases of the Nervous System, Diseases of Women, Diseases of Children, Obstetrics, Clinical and Operative Obstetrics, Clinical Medicine, Clinical and Operative Surgery, Forensic Medicine.

Three Years' Course.

For the First Year. — Anatomy, Physiology, and General Chemistry.*

For the Second Year. — Practical and Topographical Anatomy, Medical Chemistry, Materia Medica, Pathological Anatomy, Clinical Medicine, and Clinical Surgery.

For the Third Year. — Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, Clinical Surgery, Ophthalmology, Dermatology, Syphilis, Otology, Laryngology, Mental Diseases, Diseases of the Nervous System, Diseases of Women, Diseases of Children, Forensic Medicine.

METHODS OF INSTRUCTION.

The following methods of instruction are adopted in the several departments: —

Anatomy. — Lectures; various practical exercises, including abundant dissection, under the direction of the Demonstrator; recitations from text-books; histology.

Physiology. — Lectures, recitations, conferences, and practical demonstrations in the Laboratory. To students of the second, third, and fourth classes, opportunities are given for original investigations in the Laboratory.

Chemistry is taught mainly by practical work in the Laboratory, the student having his own desk and apparatus. General Chemistry and qualitative analysis are taught during the first year. Besides the laboratory-work, there is a lecture and a recitation every week. In the second year medical chemistry is taught by lectures, recitations, and exercises in the Laboratory.

---

eral chemistry equivalent in character and amount to that of the first year, on passing a satisfactory examination at the September examination, provided that satisfactory evidence of such previous study be sent to the Secretary of the Faculty one month before the date of this examination.

* See note, p. 176.

Pathological Anatomy is taught by lectures, recitations, and practical instruction in pathological histology. The collection of the Warren Anatomical Museum is used to illustrate the lectures; and many morbid specimens are shown in a fresh state. Students also receive practical instruction in the method of making autopsies, and are admitted to those made at both hospitals. Special classes in pathological histology, including the diagnosis of tumors, are formed for those who are provided with a microscope. Such students are required to prepare the various objects. The school possesses a number of microscopes for the use of those students whose means will not permit the purchase of an instrument.

Materia Medica and Therapeutics. — Materia Medica is taught by lectures and practical demonstrations. Therapeutics, or the physiological action of drugs and their application to disease, is taught in the third year by lectures, recitations, and hospital exercises.

The Theory and Practice of Medicine. — Lectures, recitations, and hospital visits.

Clinical Medicine. — Daily instruction is given in this department by hospital visits and other exercises. Students are furnished with cases for personal examination, and are called upon to report them before the class, where they are criticised. These examinations are held both in the wards and in the amphitheatre. Another exercise, known as the "Clinical Conference," affords an opportunity for more thorough preparation of cases, more time being allowed for their study. The full written report of a case is read by the student who has examined it. It is afterwards criticised by the class, by the Professor of Clinical Medicine, and other teachers in the school. In addition to this, a regular course of supplementary instruction is given in Auscultation and Percussion, and in Laryngoscopy, which affords students an abundant opportunity for acquiring a thoroughly practical knowledge of these methods of exploration.

Surgery. — Lectures and recitations. There are also courses on Surgical Anatomy, Minor Surgery, Surgical Histology, Bandaging, and Operative Surgery. In the latter, students of the third and fourth classes are supplied with material for repeating the usual surgical operations.

Instruction in Clinical Surgery is given at the Massachusetts General Hospital and City Hospital, throughout the year, as follows: —

Clinical Lecture on cases, per week, 1; Clinical Conference, per week, 1; Surgical Visits in the hospital wards, per week, 2; Public operating days, per week, 2. Total number of exercises per week, 6.

The clinical lecture is given over surgical cases brought into the operating theatre, illustrated by explorations and operations. The surgical conference is held each week, at which second and third year students make a full written report of a surgical case, which is then criticised by their fellow-students and by the Professor. Every candidate for a degree is required to report a clinical case in surgery.

Obstetrics. — Lectures and recitations. Students are instructed in the usual operations on the manikin, and will have opportunities to take charge of cases of obstetrics in their third year. A course of operative obstetrics, with practical illustrations on the cadaver, is given.

Diseases of Women. — Lectures, recitations, and practical instruction at the different dispensaries in the education of the touch. Here also every facility is given the student to become familiar with the different forms of uterine disease. A course in operative gynaecology extending throughout the year at the Free Hospital for Women is open to students of the third and fourth classes. To students of the fourth class and to post-graduates cases are assigned for personal examination; these cases are reported in full at the clinical conference, and are made the subject of discussion by members of the class and the instructor. These students are also called upon to assist at the operations in the operative course.

Diseases of Children. — Lectures and clinical instruction.

Ophthalmology. — A complete course is delivered upon the diseases of the eye, including clinical instruction and the use of the ophthalmoscope.

Dermatology is taught by lectures and clinical illustrations. The special out-patient department at the Massachusetts General Hospital furnishes ample opportunities for illustration.

Syphilis. — Recitations and clinical instruction.

Otology. — Lectures and clinical instruction.

Laryngology. — Lectures and demonstrations.

Diseases of the Nervous System. — Lectures and demonstrations.

Forensic Medicine. — Lectures and demonstrations.

Embryology. — Lectures.

TEXT-BOOKS.

The following works are recommended as text-books, and for collateral reading and consultation: —

Text-Books.	*Collateral Reading.*
ANATOMY.	
Gray, Wilson, Leidy, Turner.	Quain (edition of 1876).
Hodges's Practical Dissections.	Holden's Osteology.
Holden's Manual.	Stricker's Manual of Histology.
Holden's Landmarks.	Frey's Histology.
	Frey's Microscopic Technology.
	Tyson's Cell Doctrine.
	Klein's Atlas of Histology.

Text-Books.	*Collateral Reading.*
Topographical Anatomy.	
Dwight's Frozen Sections of a Child.	Tillaux, Anatomie Topographique. Holden's Landmarks. Dwight's Anatomy of the Head.
Physiology.	
Dalton's Human Physiology. Foster's Text-book of Physiology. Huxley's Elementary Lessons in Physiology. Martin, The Human Body.	Pavy on Food and Dietetics. Fick, Compendium der Physiologie. Fick, Medicinische Physik. Sanderson's Hand-book for the Physiological Laboratory. Flint's Physiology of Man. Carpenter's Principles of Human Physiology. Gamgee's Physiological Chemistry of the Animal Body.
General Chemistry.	
Bloxam's Chemistry, Inorganic and Organic. Clowes's Elementary Treatise on Practical and Qualitative Inorganic Analysis.	Roscoe and Schorlemmer's Treatise on Chemistry.
Medical Chemistry.	
Neubauer and Vogel, Analysis of the Urine. Tyson's Guide to the Practical Examination of the Urine. Reese's Manual of Toxicology.	Kingzett, Animal Chemistry. Gorup-Besanez, Physiologische Chemie. Taylor on Poisons. Tardieu, Étude médico-légale et clinique sur l'Empoisonnement.
Materia Medica.	
National Dispensatory, Stillé and Maisch.	United States Pharmacopoeia. Flückiger and Hanbury's Pharmakographia.

PATHOLOGICAL ANATOMY.

Text-Books.	*Collateral Reading.*
Wagner's Manual of General Pathology. Orth's Compend of Diagnosis in Pathological Anatomy.	Cornil and Ranvier's Pathological Histology. Jones and Sieveking's Pathological Anatomy (Payne's edition). Wilks's Pathological Anatomy (Moxton's edition).

THERAPEUTICS.

Text-Books.	*Collateral Reading.*
H. C. Wood's Therapeutics. Mann's Prescription Writing. Chamber's Manual of Diet.	Stillé's Therapeutics and Materia Medica. Bartholow's Materia Medica and Therapeutics. Ringer's Therapeutics.

OBSTETRICS.

Text-Books.	*Collateral Reading.*
Lusk's Manual of Midwifery.	Schroeder's Manual of Midwifery. Cazeaux's Midwifery. Winckel's Diseases of Childbed. Barker's Puerperal Diseases. Barnes's Obstetric Operations.

THEORY AND PRACTICE.

Text-Books.	*Collateral Reading.*
Flint's Practice of Medicine.	Bartholow's Practice of Medicine. Roberts's Hand-book of Theory and Practice of Medicine. Jaccoud, Traité de Pathologie Interne. Bristowe's Theory and Practice of Medicine. Flint's Clinical Medicine. Niemeyer's Text-book of Practical Medicine. Cutler and Garland's Percussion Outlines.

SURGERY.

Text-Books.	*Collateral Reading.*
Bryant's Practice of Surgery. Billroth's Surgical Pathology. Smith's Operative Surgery.	Holmes's System of Surgery. The International Encyclopedia of Surgery. Van Buren and Keyes's Genito-urinary Organs and Syphilis. Guérin, Éléments de Chirurgie Opératoire.

GYNAECOLOGY.

Text-Books.	*Collateral Reading.*
Thomas on the Diseases of Women. Fifth Edition.	Emmet's Principles and Practice of Gynaecology. Klob's Pathological Anatomy of the Female Sexual Organs. Savage, The Surgery, Surgical Pathology, and Surgical Anatomy of the Female Pelvic Organs.

The following tabular view will illustrate the distribution of studies throughout the year.

1882-83, FROM SEPTEMBER 28 TO JUNE 27.

FIRST CLASS.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Histology till May.	Laboratory.	Laboratory.	Laboratory.	Laboratory.	Laboratory.
10		Chem. L. or R., first 10 weeks.	Laboratory.	Laboratory.	Chemistry, R.	Physiology, R.
11	Laboratory.	Physiology, L.	Chemistry, L.	Histology till May.	Physiology, L.	Laboratory.
12	Physiology, L. or Conf.	Laboratory.	Laboratory.		Laboratory.	Museum.
1	Anatomy, L. till May.	Anatomy, L. till May.	Embryology, Mar. till June.	Anatomy, L. till May.	Anatomy, R. till May.	
3	Laboratory.	Laboratory.	Laboratory.	Laboratory.	Laboratory.	
4	Prac. Anat., Jan. till May.	Prac. Anat., Jan. till May.	Prac. Anat., Jan. till May.	Prac. Anat., Jan. till May.	Prac. Anat., Jan. till May.	

SECOND CLASS.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Clin. Med., B. C. H. *Laryngos'py.	B. C. H. Med. Visit. Bost. Dispen. *Laryngos'py.	M. G. H. Med. Visit, in Oct. Clin. Med., L., after Oct. *Laryngos'py.	M. G. H. Med. Visit, after Feb. *Laryngos'py.	Bost. Disp. *Laryngos'py.	Clin. Med., L. *Laryngos'py.
10	Path. Anat., L.	B. C. H. Clin. Surg., Oct. till Jan.	Bandaging, Jan. and Feb.	Chemistry, R.	B. C. H. Surg. Visit.	M. G. H. Surg. Visit.
11	M. G. H. Clin. Surg., after December. *Auscultation	*Auscultation	*Auscultation	*Auscultation	B. C. H. Op. *Auscultation	M. G. H. Op.
12	Materia Medica.	Laboratory.	Top. Anat.	M. G. H. Surg. Conf., after Oct.	Chemistry, L.	Museum.
3	Path. Histology.	Path. Anat., R.	Path. Anat., L.	Path. Hist.	Path. Anat., R.	
4	Prac. Anat., till May.	Surgery, R. Prac. Anat., till May.	Prac. Anat., till May.	Prac. Anat., till May.	Clinical Conf. Prac. Anat., till May.	

* Till February in sections.

THIRD CLASS.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Clin. Med., B. C. H. Eye and Ear Inf.	B. C. H. Med. Visit. Boston Disp.	M. G. H. Med. Visit, in Oct. Clin. Med., L., after Oct.	Otol. L., in Nov. Clin. Otol. E. and E. Inf., Dec., Jan., & Feb. M. G. H. Med. Vis. after Feb.	B. C. H. Ophthal. Otol. L., in Dec. Clin. Otology, B. C. H., Jan., Feb., Mar.	Clinical Med., L.
10		B. C. H. Clin. Surg., Oct. till Jan.	Clin. Dermatol.	Theo. & Pract. L.	B. C. H., Surg. Visit. Boston Disp.	M. G. H. Surg. Visit.
11	Surgery, L., till Jan. M. G. H. Clin. Surg., after Dec.	Dis. of Nerv. Sys., till Feb. Mental Dis., after Feb.	Obstetrics, R. *Gynaecology till April.	Surgery, L.	B. C. H. Op. Dis. of Chil., till Feb.	M. G. H. Op. *Gynaecology till April.
12	Theo. & Prac. L.	For. Med. till Jan. Surg. Anat. & Op. Surg., Mar. & Apr.	Diseases of Children, Nov. to May.	M. G. H. Surg. Conf. after Oct.	Syph. till Feb. Surg. Anat. & Op. Surg., Mar. & Apr.	Museum.
2	Gynaecol. L.					
3	Obstetrics, L.	Ophthalmology.	Theo. and Prac., R.	Obstetrics, L. *Gynaecol.	Theo. and Prac., R.	Mental Dis. Clinic. after Apr. 15.
4	Therapeutics, L.	Dermatology, L.	Therapeutics, L.	Therapeutics, R.	Clinical Conf.	

The practical course in Operative Surgery, for third-year's students, will be given from 4 to 6 P.M., after May 1st, and the course in Operative Obstetrics from 2 till 4 P.M., during two weeks in February; conflicting exercises will be omitted during their continuance.

* At the Boston Dispensary or Free Hospital for Women, in sections.

The Annual Examinations begin June 11; all conflicting exercises then cease.

FOURTH CLASS.*

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Ophthal., B.C.H., C & D Oct. Nov. Dec. A & B Ap.May, June. Otol., E. & E. Inf., A & B, Dec. Jan. Feb. B.C.H., C & D, Jan. Feb. Mar.	Dis. of Ner. Sys., B.C.H. C & D till Feb. Laryngology, Feb. and Mar.	Ophthal., B.C.H., C & D Oct. Nov. Dec. A & B Ap.May, June. Otol., E. & E. Inf., A & B, Dec. Jan. Feb. B.C.H., C & D Jan. Feb. Mar.	Dis. of Nerv. Syst., B. C. H. C & D till Feb. Laryngology, Feb. and Mar.	Laryngology, Feb. & Mar.	Clin. Med., Bost. Disp.
10	Dis. of Chil., A & B till Feb. C & D after Jan.	Dermatol., A & B till Feb. C & D after Jan.	Dermatol., A & B till Feb. C & D, after Jan.	Dis. of Chil., A & B till Feb. C & D after Jan.	Dermatology, A & B till Feb. C & D after Jan.	Dis. of Chil., A & B, till Feb. C & D after Jan.
11	Gynaecology, †B till Feb., †D after Jan. Clin. Obstet., C Oct. Nov. Dec. A Ap. May Ju.	Dis. of Nerv. Sys., M. G. H. A & B after Jan. Ophthalm., M. G. H. A & B Dec. Jan. C & D Feb. Mar.	Gynaecology, C & D till Feb. A & B after Feb. †A till Feb. †C after Jan.	Dis. of Nerv. System, M. G. H. A & B aft. Jan. Oph., M. G. H. A & B Dec. Jan. C & D Feb. Mar.	Gynaecology, †A or B till Feb. †C or D after Jan. Clin. Obstet., D Oct. Nov. Dec. B, Apr. May, June.	Gynaecology, C & D till Feb. A & B after Jan.
11.30	Syphilis, A till Feb. C after Jan.		Syphilis, B till Feb. D after Feb.			
12					Clin. Surg., M. G. H.	
2	Gynaecol., L.					
3		Gynaecol Conf.		Ophthal., L. Gynaecology, Free Hospital, C & D till Feb. A & B aft. Jan.		Mental Dis. Clinic.
4	Orthoped. Sur. Nov. and Dec.	Dermatology, L.	Ovar. Tumors, Jan. & Feb. Orthoped. Sur. Nov. & Dec.	Clin. Med., B. C. H.	Forensic Med., A & B till Feb. C & D aft. Jan.	

---

* Divided into Sections A, B, C, D.

† The clinical exercises in Gynaecology for A and B till Feb. and for C and D after Jan., are at the Dispensary for Women in Staniford St.

The course in Operative Obstetrics takes place from 2 till 4 P.M., during a fortnight in February.

Due notice will be given of the course in Operative Surgery.

INSTRUCTION FOR 1882–83 TO STUDENTS OF THE THREE YEARS' COURSE.

ANATOMY.

Descriptive Anatomy. *Four times a week till May.* PROFESSOR HOLMES.

Practical Anatomy, with Exercises in Dissection. *Eight hours daily from November till May.* DRS. RICHARDSON, OTIS, and MIXTER.

Topographical Anatomy. *Once a week.* DR. DWIGHT.

Laboratory Exercises in Histology. *Twice a week till May.* DRS. DWIGHT and QUINCY.

Embryology. *Fifteen lectures.* DR. C. S. MINOT.

PHYSIOLOGY.

Systematic and Experimental Physiology. *Four times a week.* PROFESSOR BOWDITCH.

Laboratory Exercises in Experimental Physiology. DR. J. W. WARREN.

CHEMISTRY.

General and Analytical Chemistry. *Twice a week, with an additional weekly exercise during the first ten weeks.* DR. HILLS.

Medical and Toxicological Chemistry. *Twice a week.* PROFESSOR WOOD. Practical Exercises in the Laboratory for General Chemistry. *Daily.* DR. HILLS. Practical Exercises in the Laboratory for Medical Chemistry. *Daily.* PROFESSOR WOOD and DR. EMERSON.

MATERIA MEDICA AND THERAPEUTICS.

Materia Medica, with Practical Demonstrations. *Once a week.* DR. BOLLES.

Therapeutics. *Three times a week.* PROFESSOR EDES.

PATHOLOGY AND PATHOLOGICAL ANATOMY.

General Pathology and Pathological Anatomy. *Twice a week.* PROFESSOR FITZ.

Special Pathological Anatomy, with Demonstrations. *Twice a week.* PROFESSOR FITZ.

Laboratory Exercises in Pathological Histology. *Twice a week till April.* Drs. Whitney and Gannett.

Practical Instruction in Performing Autopsies. *Throughout the year.* Professor Fitz and Dr. Gannett.

SURGERY.

Surgery. *Once a week throughout the year.* Professor Cheever.

Surgical Pathology. *Once a week till January.* Assistant Professor Warren.

Clinical Surgery. *Once a week till January.* Professor Cheever. *Once a week from January till March.* Assistant Professor Porter. *Once a week from March till June.* Assistant Professor Warren.

Surgical Conference. *Once a week from November till May.* Assistant Professor Porter.

Operative Surgery. *Fifteen practical exercises.* Assistant Professor Porter and Dr. Otis.

Recitations in Surgery and Surgical Pathology. *Once a week throughout the year.* Assistant Professor Warren.

Surgical Anatomy and Operative Surgery. *Twice a week in March and April.* Assistant Professor Porter.

Application of Bandages and Apparatus. *Twelve practical exercises.* Assistant Professor Warren and Dr. Bradford.

Laboratory Exercises in Surgical Histology. *Twice a week after March.* Drs. Whitney and Bigelow.

Surgical visits are made at the Massachusetts General Hospital by Professor Bigelow, Assistant Professors Porter and Warren, and Drs. Hodges, Beach, and Homans. — At the City Hospital, by Professor Cheever and Drs. Homans, Thorndike, Ingalls, Fifield, and Gay. — The Surgical Cases at the Eye and Ear Infirmary and at the Boston Dispensary are shown by the surgeons in charge.

OPHTHALMOLOGY.

Diseases of the Eye. *Once a week.* Professor Williams.

Clinical Ophthalmology. *Once a week till January, and after March.* Professor Williams.

DERMATOLOGY.

Diseases of the Skin. *Once a week.* Professor White.

Clinical Dermatology. *Once a week.* Professor White.

SYPHILIS.

Practical Diagnosis and Treatment of Syphilis. *Once a week for a half-year.* Dr. Post.

OTOLOGY.

Anatomy and Physiology of the Ear. *Once a week in November.* Dr. Blake.

Otoscopy and Pathology of the Ear. *Once a week in December.* Dr. Green.

Clinical Otology. *Once a week in December and March.* Drs. Green and Blake.

SPECIAL PATHOLOGY AND THERAPEUTICS.

Theory and Practice of Physic. *Five times a week.* Professor Minot and Dr. Whittier.

Clinical Medicine. *Four times a week.* Professors Minot and Edes.

Practical Instruction in Auscultation and Percussion. *Six times a week during the first half-year.* Drs. Mason, Shattuck, and Garland.

Practical Diagnosis and Treatment of Diseases of the Larynx. *Six times a week, first half-year.* Assistant Professor Knight.

Practical Diagnosis and Treatment of Diseases of Children. *Once a week, first half-year.* Dr. Oliver. —*Once a week for six months.* Dr. Rotch.

Practical Diagnosis and Treatment of Diseases of the Nervous System. *Once a week till February.* Dr. Webber. — *Once a week after January.* Dr. Putnam.

Mental Diseases. *Eight lectures.* Assistant Professor Folsom.

Forensic Medicine, with Demonstrations. *Twelve exercises.* Dr. Draper.

Medical visits are made at the Massachusetts General Hospital by Professors Ellis and Minot and by Drs. Shattuck, Abbot, Shaw, and Tarbell. — At the City Hospital, by Professor Edes and Drs. Blake, Lyman, Stedman, Draper, Doe, Mason, Sumner, and G. B. Shattuck. — At the Danvers Asylum for the Insane. — The Medical Cases at the Boston Dispensary are shown by the physicians in charge.

OBSTETRICS.

Theory and Practice of Obstetrics. *Twice a week.* Professor Reynolds.

Recitations in the Theory and Practice of Obstetrics. *Once a week.* Assistant Professor Richardson.

Operative Obstetrics. *Twelve practical exercises.* Assistant Professor Richardson.

Practical Instruction in Clinical Obstetrics. *Throughout the year.* Assistant Professor Richardson.

GYNAECOLOGY.

Twice a week. Assitant Professor Baker. Two clinics each week during the second half-year. Assistant Professor Baker. Two clinics each week during the first half-year. Dr. Davenport.

INSTRUCTION FOR 1882–83 TO STUDENTS OF THE FOURTH YEAR.

CLINICAL MEDICINE.

Once a week. Dr. Draper.
Once a week. Dr. Garland.

SURGERY.

Clinical Surgery. *Once a week.* Assistant Professors Warren and Porter.

Operative Surgery. *Practical Exercises.* Assistant Professor Porter.

Orthopedic Surgery. *Twice a week in November and December.* Dr. Bradford.

OBSTETRICS.

Clinical Obstetrics. *Twice a week for six months.*

Operative Obstetrics. Practical Exercises. Assistant Professor W. L. Richardson.

OPHTHALMOLOGY.

Clinical Exercises. *Twice a week for six months.* Professor Williams.

Ophthalmoscopy. *Once a week for four months.* Dr. Wadsworth.

DERMATOLOGY.

Clinical Exercises. *Three times a week.* Lectures. *Once a week.* Professor White.

GYNAECOLOGY.

Clinical Instruction and Operative Gynaecology. *Six hours a week.* Assistant Professor Baker and Dr. Davenport.

Clinical Instruction and Twelve Introductory Lectures. Dr. Chadwick.

DISEASES OF CHILDREN.

Clinical Exercises. *Three times a week.* Drs. Oliver and Rotch.

DISEASES OF THE NERVOUS SYSTEM.

Clinical Exercises. *Twice a week.* Drs. Webber and Putnam.

MENTAL DISEASES.

Clinical Exercises. *Once a week.* Assistant Professor Folsom.

LARYNGOLOGY.

Clinical Exercises. *Three times a week for two months.* Assistant Professor Knight.

OTOLOGY.

Clinical Instruction, Lectures, and Demonstrations, including Instruction in making Sections and Preparations. *Twice a week for three months.* Dr. Blake. *Twice a week for three months.* Dr. Green.

FORENSIC MEDICINE.

Lectures and Demonstrations. *Once a week.* Dr. Draper.
Demonstrations. Dr. Harris.

SYPHILIS.

Clinical Exercises. *Two hours a week during the year.* Dr. Greenough.

OVARIAN TUMORS.

Practical Diagnosis and Treatment. Six Introductory Lectures and occasional Clinical Exercises. Dr. Homans.

COOKERY.

Practical Instruction in preparing Food for Infants and Invalids. Six Exercises.

CLINICAL ADVANTAGES.

The Medical Department of the University is established in Boston, in order to secure those advantages for Clinical Instruction and for the study of Practical Anatomy which are found only in large cities.

There are Hospital visits or operations daily.

The Massachusetts General Hospital. — During the past year, 2,270 patients were treated in the wards, and 18,443 in the out-patient departments. Patients are received from all parts of the United States and the Provinces, and are visited by the students with the attending physicians and surgeons. The opportunities for becoming acquainted with general surgery are very great. Operations are numerous, and are performed in the amphitheatre, which is provided with seats for 400 persons. Clinics in the following special branches have been established in connection with the out-patient department: Dermatology, Laryngology, Diseases of the Nervous System, and Ophthalmology.

The Hospital is adjacent to the Medical College, and its wards are open to the students on four days in the week.

The City Hospital. — During the past year, 4,382 cases were treated in its wards, and 12,013 in its various out-patient departments. The Medical wards always contain many cases of acute diseases, and changes are taking place constantly. The opportunities for seeing fractures, injuries, and traumatic cases of all kinds are excellent, since, on an average, 800 street accidents are yearly treated. Surgical operations are performed in the amphitheatre. These include general surgical and also ophthalmic operations. Diseases of the eye, the ear, and the skin are largely treated in the out-patient department. Clinical instruction is given by the physicians and surgeons twice a week.

In these two hospitals, the facilities for witnessing Operative Surgery are unsurpassed. Twice a week operations are performed in the presence of the class. The number of these operations is large, reaching nearly two thousand a year. The variety is great, embracing every surgical disease and injury, including the surgical operations on the eye and ear.

The Massachusetts Charitable Eye and Ear Infirmary. — The nine thousand patients annually treated at this institution present every variety of disease of the ear and eye, and supply a large number of operations.

The Marine Hospital at Chelsea receives from the shipping of the port a large number of patients, who furnish examples of the diseases of foreign countries and of distant parts of the United States. Many cases of venereal disease, in its various forms, are treated annually.

The Boston Dispensary. — 26,178 patients were treated at this Public Charity during the past year. Students have excellent opportunities to see minor surgery, and many of the diseases of children, and to practise auscultation.

The Free Hospital for Women. — In the wards of this institution, which is devoted exclusively to the diseases peculiar to women, abundant opportunity is offered to study the severer forms of uterine disease and to witness operations, which are performed once a week throughout the year.

There are twenty-five appointments annually for Internes in the various hospitals, and as many more for Assistants in the out-patient departments. Appointments for the Massachusetts General and City Hospitals are for the term of eighteen months, for the Boston Lying-in Hospital for four months, and for the Free Hospital for Women for nine months.

Students are also permitted to visit the Children's Hospital and the Carney Hospital on application to the physicians on duty.

EXAMINATIONS.

The regular examinations are held in the following order: —

At the End of the First Year. — Anatomy, Physiology, and General Chemistry.*

End of Second Year — Topographical Anatomy, Medical Chemistry, Materia Medica, and Pathological Anatomy.

End of Third Year. — Therapeutics, Obstetrics,† Theory and Practice of Medicine, Surgery.†

End of Fourth Year. — Ophthalmology, Otology, Dermatology, Syphilis, Laryngology, Mental Diseases, Diseases of the Nervous System, Diseases of Women, Diseases of Children, Clinical and Operative Obstetrics, Clinical Medicine, Clinical and Operative Surgery, Forensic Medicine.

Students attending the four years' course may be examined at the end of the third or fourth year as preferred in Clinical Medicine, Clinical Surgery, and Obstetrics. The examinations of the first two years are common to both groups of students. The final examinations at the close of the three years' course are in the following subjects: Therapeutics, Obstetrics, Surgery and Clinical Surgery, Theory and Practice, and Clinical Medicine.

The regular examinations are held at the end of each year in June, and a week before the opening of the School in September, on the studies of the preceding year.‡

No student shall be allowed to anticipate the examinations in the regular course of studies of his year, except by special permission of the Faculty. *All students are required to notify the Secretary in writing of their intention to present themselves for examination, either in June or September, one month before such examination is to be held.*

The examinations are conducted mainly in writing. No student will receive his degree until he has passed a satisfactory examination in all the subjects of the three years' course, and presented a certificate from the Demonstrator of Anatomy that he has satisfactorily dissected the three parts of the body. Those who fail in any subject may present themselves in that subject again, at the next regular examination. The regular examinations for the year 1882–83 will begin June 11 and September 24.

---

* See foot-note on page 176.

† The examinations in Obstetrics and Surgery may be passed at the end of the fourth year if preferred.

‡ The June examination is for those only who are members of the School at the time, and for those entitled to apply for the degree.

The following was the order of the examinations held in June, 1882: —

Monday (June 12), Surgery and Clinical Surgery, Operative Surgery, Ophthalmology, Otology, and Mental Diseases; Tuesday, Obstetrics, Clinical and Operative Obstetrics, and Gynaecology; Wednesday, Clinical Medicine; Thursday, Therapeutics, Dermatology, Venereal Diseases, and Forensic Medicine; Friday, Theory and Practice, Diseases of Children, Laryngology, and Diseases of the Nervous System; Saturday, Pathological Anatomy; Monday (June 19), Medical Chemistry; Tuesday, Materia Medica; Wednesday, Anatomy, and Topographical Anatomy; Thursday, Physiology; Saturday, General Chemistry.

The examinations for admission are held at the Medical School, in June and September, on the Monday preceding the last Wednesday in those months, beginning at 10 A.M.

In 1883 the *examinations for admission* will ALSO be held at the following places, beginning at 8 A.M. on Thursday, June 28: —

In *Exeter*, in rooms of the Phillips Exeter Academy; in *New York*, in the lecture-room of the Young Men's Christian Association, Twenty-third Street, corner of Fourth Avenue; in *Philadelphia*, in the library-hall of the Academy of Natural Sciences, S. W. corner of Nineteenth and Race Streets; in *Cincinnati*, in the rooms of the Law School of the University of Cincinnati, College Building, Walnut Street; in *Chicago*, in the rooms of the Chicago Athenaeum, 50 Dearborn Street; in *St. Louis*, in the Central High School building, corner of Olive and Fifteenth Streets; in *San Francisco*, in rooms of the Boys' High School, on Sutter Street, between Gough and Octavia Streets.

DIVISION OF STUDENTS.

Students are divided into four classes, according to their time of study and proficiency, and during their last year will receive largely increased opportunities of instruction in the special branches mentioned. Students following the three years' course are classified as heretofore, and the instruction in the special branches is of the same character as that which has been given for several years. Students who began their professional studies elsewhere may be admitted to advanced standing; but all persons who apply for admission to the advanced classes must pass an examination in the branches already pursued by the class to which they seek admission, and furnish a satisfactory* certificate of time spent in medical studies. No student shall advance with his class, or be admitted to advanced standing, until he has passed the required examinations in the studies of the previous year, or a majority of them; nor shall he become a member of the third class until he has passed all the examinations of the first, in addition to a majority of those of the second year.

---

* Certificates from teachers who practise any peculiar or exclusive system of medicine are not accepted.

Students who do not intend to offer themselves for a degree will, however, be received for any portion of the course.

Any student may obtain a certificate of his period of connection with the School.

REQUIREMENTS FOR THE DEGREE.

Every candidate must be twenty-one years of age, and of good moral character; must give evidence of having studied medicine three or four full years; have spent at least one continuous year at this School; have presented a satisfactory thesis; and have passed the required examinations.

The course of study recommended by the Faculty covers four years; but, until further notice, the degree of Doctor of Medicine will continue to be given upon the completion of three years of study, to be as ample and full as heretofore, to candidates who have passed satisfactorily the examinations hitherto required.

The degree of Doctor of Medicine *cum laude* will be given to candidates who have pursued a complete four years' course, and obtained an average of seventy-five per cent upon all the examinations above stated. In addition to the ordinary degree of Doctor of Medicine, as heretofore obtained, a certificate of attendance on the studies of the fourth year will be given to such students desiring it as shall have attended the course, and have passed a satisfactory examination in the studies of the same.

Theses of conspicuous merit are mentioned with honor, or read at the University Commencement.

The degree of Master of Arts is open to graduates of the School who are also Bachelors of Arts of Harvard College, and to Bachelors of Arts of other colleges who shall be recommended by the Faculty of Harvard College. Candidates must pursue an approved course of study in Medicine for at least one year after taking the degree of Doctor of Medicine.

LIBRARIES.

The library at the Medical College is open to the student, on the deposit of five dollars, to be refunded to him when he may desire, after returning all books.

The College Library at Cambridge is open to the students of the Medical School.

The Boston Public Library, which contains a large collection of Medical books, may also be used by students recommended by the Dean.*

---

* Only those are recommended who have deposited with the Treasurer a bond or the sum of fifty dollars.

BOYLSTON MEDICAL SOCIETY.

This Society, composed of medical students, meets at stated intervals for the discussion of medical topics, and is presided over by a physician selected by the members. Prizes, in money or books, are awarded annually to the writers of essays judged worthy of such distinction by a committee of physicians selected for that purpose by the Society.

ANATOMICAL PRIZE.

Assistant Professor C. B. Porter offers a prize of fifty dollars, open to all students, and graduates of not more than five years' standing except teachers of anatomy, for the best dissection deserving the award illustrative of surgical anatomy, the specimen to be presented to the Museum.

FEES AND EXPENSES.

For matriculation, five dollars; for a year, two hundred dollars (if in two payments, at the first one hundred and twenty dollars; at the second, eighty dollars); for a half-year alone, one hundred and twenty dollars; for graduation, thirty dollars. Of students who do not pay in advance, a bond for $300, executed by two sufficient bondsmen, one of whom must be a citizen of the United States, is required. A copy of such bond will be sent, on application to the Secretary of the Faculty. To students depositing these bonds, term-bills will be presented at the end of the first term, to be paid within two weeks; and also one week or more before Commencement, to be paid on or before the beginning of the next academic year. Such students shall be held responsible for the payment of fees until they shall have notified the Dean of their intention to withdraw from the School, and have subsequently received their bond from the Treasurer. No degree can be conferred till all dues to the School are discharged. The student's general expenses may be reduced, in accordance with his means, to the standard which prevails in other cities. The janitor of the Medical College will always have a list of boarding-houses in the vicinity of the College building, varying in their rates of charges from five to ten dollars a week.

PECUNIARY AID.

Four yearly scholarships have been established by the Faculty of the value of $200 each, open to meritorious students who have been at the School for at least one year. The Barringer scholarships, of the value of $300 and $200 respectively, will be awarded to deserving students of the fourth class. Only those needing assistance are expected to apply; and from such those holding the highest rank will have the preference.

Two assistants in the Chemical Laboratory are appointed annually from such deserving students as need aid. Students holding this position are exempt from the payment of the fee for tuition during their term of service.

COURSE OF STUDY FOR GRADUATES.

For the purpose of affording to those who are already graduates in medicine additional facilities for pursuing clinical, laboratory, and other studies, for which they had not previously found leisure, in such subjects as may especially interest them, and as a substitute in part for the opportunities heretofore sought in Europe, the Faculty have established a post-graduate course, of which the following is a programme. The fee in each branch is for a single half-year.

Histology. — The various methods of examining the different tissues are employed, and opportunities for original research are offered. Fee, twenty dollars.

Physiology. — Opportunities for original investigation in the Physiological Laboratory. Fee, thirty dollars.

Medical Chemistry. — Practical instruction in the Chemical Laboratory, in the analysis of the urine and other animal fluids in health and disease, and of poisons; examination of blood-stains and other objects connected with medico-legal investigations, with the application of the microscope to these processes. General analysis, also, if desired. Laboratory-fee, thirty dollars.

Pathological Anatomy. — Practical instruction in Pathological Histology and the examination of specimens in the Microscopical Laboratory; and opportunity for witnessing and making autopsies. Fee, twenty dollars.

Surgery. — A practical course of operative surgery, and instruction in the application of bandages and apparatus. Fee, twenty-five dollars.

Laryngology is practically taught, and diseases of the larynx demonstrated by the aid of the oxyhydrogen light. Fee, twenty dollars.

Ophthalmology. — Clinical instruction, lectures on diseases of the eye, and demonstrations of the methods of performing operations. Exercises in the use of the ophthalmoscope. Fee, twenty-five dollars.

Otology. — Lectures and clinical instruction in diseases of the ear. Fee, fifteen dollars.

Dermatology. — Clinical instruction in diseases of the skin, illustrated by patients in this department of the Massachusetts General Hospital. Lectures. Fee, twenty-five dollars.

Syphilis. — Clinical instruction at the Boston Dispensary. Fee, fifteen dollars.

Diseases of the Nervous System. — Practical illustrations of the application of various forms of electricity. Lectures. Fee, fifteen dollars.

Gynaecology. — Clinical instruction in diseases of women. Fee, twenty-five dollars.

Obstetrics. — Cases supplied, and clinical instruction given. A course of operative obstetrics. Fee, twenty-five dollars.

Those pursuing this course may elect the studies to which they will give their attention, and allot the time they will devote to each. They will be exempt, unless at their option, from examinations, and may obtain a certificate of attendance on this course of advanced study. On payment of the full fee for the course, they will have the privilege of attending any of the other exercises of the Medical School, the use of its laboratories and library, and all other rights accorded by the University.

Graduates of other medical schools may obtain the degree of M.D. at this University, after a year's study in the graduates' course. The required examinations may be passed in such order as is desired, but only at the stated seasons.

The fee for a year is	$200
" for a half-year	$120

For any of the special courses, such fees as are above specified.

For further information or catalogues, address Dr. R. H. Fitz, *Secretary,* 18 Arlington Street, Boston, Mass.

☞ The Medical College is on North Grove Street, Boston.

EXAMINATION PAPERS.

(*June Examination*, 1882.)

First Year's Studies.

ANATOMY. — Professor Holmes.

Describe: —

1. Red and white blood-corpuscles.
2. Ciliated epithelium.
3. 12th dorsal vertebra.
4. Male and female sacrum.
5. Articulations of the pelvic bones.
6. Occipito-frontalis.
7. Triceps extensor cubiti.
8. Fascia lata of the thigh.
9. Internal carotid.
10. Thyroid arteries, superior and inferior.
11. The abdominal regions.
12. Contents of the right iliac region.
13. Structure of the spleen.
14. The gall-bladder and bile-ducts.
15. Glands of the intestine.
16. The cerebellum.
17. The inferior dental nerve.
18. The great splanchnic nerve.
19. The cornea.
20. The iris.

PHYSIOLOGY. — Professor Bowditch.

[Number the answers to the questions without copying the questions themselves. Do not number the pages of the book. Answer the questions in order, writing on each page in succession.]

1. Define "potential energy," and illustrate by physiological examples.

2. What causes the sensation of hunger?

3. Explain the process of bread-making.

4. Explain the process of gastric digestion.

5. What reason is there for supposing that albuminoid substances may be absorbed without being changed into peptones?

6. Point out the resemblances between blood and muscular tissue.

7. What is the function of haemoglobin?

8. What is the cause of the heart sounds?

9. What is the measure of "absolute muscular force"?

10. What is the function of the nerves of muscular sense?

11. What are the functions of ciliated epithelium in the human body?

12. What is the difference between warm and cold blooded animals?

13. What is the function of glycogen in the animal economy?

14. What is the effect upon a motor nerve of sending through it a brief constant current of electricity of medium strength?

15. Explain Myopia and Hypermetropia, and give a diagram showing the course of the rays of light.

16. What is the difference between the anterior and the posterior spinal roots?

17. What is the effect of an extensive destruction of the cerebral cortex?

18. What three motor nerves are brought into action in mastication?

19. What is the function of the cochlea?

20. How are the lungs developed?

GENERAL CHEMISTRY. — Instructor Hills.

[In addition to the following questions, a written report of the analysis of a solution containing inorganic substances was required.]

1. State and illustrate the laws of definite and multiple proportions.

2. How many liters of carbon dioxide can be made from 15 grams of marble?

$$CaCO_3 + 2\ HCl = CaCl_2 + CO_2 + H_2O.$$

3. Write the reactions by which hydrogen, oxygen, chlorine, nitric acid, and hydrochloric acid are usually made.

4. Compare the properties of common and red phosphorus.

5. Properties, physical and chemical, of As_2O_3.

6. Causes of the temporary and permanent hardness of waters? How may the two kinds of water be made soft?

7. Describe the blast-furnace process for obtaining cast iron from iron ores.

8. Properties and uses of platinum.

9. Preparation, properties, and uses of potassium cyanide.

10. What is an alcohol? Preparation and properties of ethylic alcohol.

11. Tests for H_2SO_4, HNO_3, HCl.

12. Symbol, color, and solubility of the precipitate produced upon the addition of ammonium sulphide to a neutral or alkaline solution of a salt of each member of the Zinc and Iron Groups.

$Ca = 40$, $C = 12$, $O = 16$. One liter hydrogen = 0.0896 grams.

Second Year's Studies.

MEDICAL CHEMISTRY. — Professor Wood.

[In addition to the following questions, a written report of the analysis of a specimen of urine was required.]

1. Average amount of urine and Sp. Gr. in the different forms of renal disease ?

2. Principal tests for sugar in the urine ? Give all of the precautions to be taken in performing these tests. How estimate the amount of sugar quantitatively ?

3. Character of the urine and sediment in all of the stages of a case of acute parenchymatous nephritis terminating in recovery ?

4. Character of the urine and sediment in passive hyperaemia of the kidney ? Under what circumstances may passive hyperaemia occur ?

5. What inferences may be drawn from urine having the following characteristics ? State reasons in full.

Pale. Acid. Sp. Gr. = 1008. Amount of sediment = Considerable.

Uph. = —. $\overset{+}{U}$. = —. Cl. = —. E. P. = —.
Ind. = —. $\bar{U}$. = —. Sf. = —. A. P. = —.

Albumen = large trace. Bile and sugar absent.
Sediment = Hyaline and granular casts.

Total amount of urine = 1500 cub. cent.
" " " urea = 18.00 grm.
" " " chlorine = 2.72 "
" " " albumen = 2.09 "

6. Causes of oxaluria ? Recognition of calcic oxalate in the sediment ?

7. Characteristics, physical and chemical, of a mulberry calculus ?

8. Describe the different forms of epithelium which may be found in a urinary sediment.

9. Describe the physical and chemical properties of, and special tests for tartar emetic, corrosive sublimate and calomel.

10. Principal points of difference between sulphuric and nitric acid poisoning ? Between chronic lead and chronic copper poisoning ?

11. Sources of chronic lead, chronic arsenic and prussic acid poisoning ?

12. Symptoms of digitalis poisoning, acute and chronic ?

MATERIA MEDICA. — Instructor Bolles.

I. What are Supposit[illegible] ? Tinctures ? Fluid Extracts ? Waters ? Ointments ? What is th[illegible]ning of officinal ?

II. What is the composition, as complete as you can give it, of Guarana ? of Aconite ? of Belladonna ? of Jalap ? of Aloes ?

III. What are the active principles of 1. Coca? 2. Jaborandi? 3. Physostigma? 4. Granati Radicis Cortex? 5. Scilla? 6. Glycyrrhiza? 7. Brayera? 8. Catechu? 9. Senna? 10. Veratrum Viride?

IV. What are the principal botanical species of Cinchona? 2. The principal commercial varieties of Cinchona-bark? 3. Describe its collection and preparation in South America. 4. The history and success of the Cinchona culture? 5. Give the names of the alkaloids, acids, neutral and coloring principles of Cinchona.

V. The natural history, collection, appearance, composition, preparations, and doses of Ergot.

VI. The same of Kino.

VII. The same of Copaiba.

VIII. Doses of 1. Potassii Iodidum; 2. Tinct. Rhei; 3. Acetum Opii; 4. Syrupus Ferri Iodidi; 5. Strychniae Sulphas; 6. Tinct. Hyoscyami; 7. Hydrargyri Chloridum; 8. Physostigma; 9. Ex. Fl. Conii; 10. Infusum Gentian. Co.

IX. Write a prescription 1. for a cathartic (not officinal) containing at least three ingredients besides the excipient (if any); 2. for Digitalis; 3. for some preparation of Jaborandi for subcutaneous use — with full directions and doses.

X. Recognize samples. Give both Latin and English names.

PATHOLOGICAL ANATOMY. — Professor Fitz.

1. Explain the term coagulation-necrosis, and give examples.

2. Explain colloid degeneration.

3. State briefly the relation between septicaemia, pyaemia, and puerperal fever.

4. Give the main features of the modern classification of tumors.

5. Describe the nature of free bodies in joints. /5

6. Enumerate the causes of cranial deformity.

7. Give the appearances and origin of yellow patches of the brain.

8. Give the appearances and result of chronic interstitial myocarditis.

9. Give the causes and appearances of brown atrophy of the heart.

10. Describe the differing appearances of pulmonary haemorrhage in connection with the causes.

11. Give the appearances of emphysema of the lungs.

12. Describe the alterations of the stomach due to arsenical poisoning.

13. Describe the appearances of amyloid degeneration of the intestines.

14. Enumerate the changes in the liver resulting from obstruction of the common bile-duct.

15. Describe the results of hepatic embolism and mention the vessels usually affected.

16. Give the causes and appearances of bilateral hydronephrosis.

17. Enumerate the conditions producing increased density of the kidney.

18. Describe the appearances of acute miliary tuberculosis of the bladder.

19. Describe the appearances of diphtheritic endometritis.

20. Describe the appearances of elephantiasis of the male genitals.

TOPOGRAPHICAL ANATOMY. — Instructor Dwight.

1. What would be pierced by a needle thrust into the head in front of the ear and above the zygoma?

2. Give the relations of the muscles, tendons, arteries, and nerves in the front of the wrist just above the anterior annular ligament.

3. Give the boundaries and contents of the popliteal space and the relations of the parts.

4. Give the soft parts filling the space between the sacrum and coccyx behind and the ischium in front, their relations to one another and to the vessels and nerves; give also the structures covering them.

5. Give the course of the oesophagus, the points of its beginning and end, and its relations.

Third Year's Studies.

THERAPEUTICS. — Professor Edes.

[Say what you mean clearly and *only once*. Do not use words and phrases of vague or unknown signification.]

Suppose that you have under your care the family of a gentleman, who is not a practising physician but who is thoroughly educated in physiology and chemistry, and insists upon having a reason for all you do.

The following cases occur in his family. Explain, as you would to him, the details of and REASONS for your treatment.

1. His wife suffers from intermittent fever for which (*a*) you prescribe quinine. (*b*) Suppose that you could not get any of the cinchona alkaloids.

2. Afterward she has much gastric irritability, in relieving which you have to use a variety of diet and drugs.

3. It becomes desirable on account of anemia to use (*a*) iron and (*b*) arsenic.

4. His son, aged 18, previously healthy, has acute articular rheumatism which you treat with alkalies and palliatives. (His heart is not affected.)

5. By this time the gentleman himself has become nervous and sleepless and you try various hypnotics.

OBSTETRICS. — Professor Reynolds.

1. What is, in general terms, the normal relation between the axis of the vagina and that of the uterus? How are the apparent results of digital examination, during labor and under other conditions, affected by this relation?

2. Give the history of the outermost covering of ovule and ovum from the rupture of the ovisac till term.

3. Mention the several varieties in arrangement of membranes and placentas which occur in multiple pregnancy. How does multiple pregnancy influence the rule of conduct in the third stage of labor ?

4. Describe the performance of ballottement, state the results which it gives, and note their relative value among the signs of pregnancy. Under what conditions is it most successful ?

5. What is the clinical significance of vomiting during labor ?

6. If in cranial presentation the head be unduly extended, if as a consequence labor be much prolonged, and the head make its escape at the vulva by extension backward, where on the scalp will the caput succedaneum be formed ? The position is left.

7. Give the mechanism of "spontaneous evolution."

8. Describe the vectis, give the rules for its application, and state the purposes for which it is best employed.

9. Recount the varying results and consequences which inflammation of the pelvic connective tissue occasions in lying-in women.

10. Give the clinical history of a marked case of Acute Septicaemia. What changes will be found post mortem ?

SURGERY. — Professor Bigelow.

1. State in detail how to pass a catheter.

2. State in detail how to reduce a dislocation of the hip upwards and backwards and the reasons for the manoeuvres.

3. The varieties of clubfoot and the operations for it.

4. How would you do ovariotomy ?

5. What are the signs and usual localities for weeping sinew ? How would you treat it ?

6. Enumerate the constitutional symptoms of Syphilis.

7. By what appearances and how would you discover a cataract and how treat it ?

8. Scrofulous inflammation of the testicle.

9. Hemorrhoids and their treatment.

10. Epulis.

CLINICAL SURGERY. — Professor Cheever.

[In addition to the following questions, the clinical report of a surgical case is required, to be presented on or before June 1.]

[One hour and a half is assigned for answering the following questions.]

Case I. — A child of 13 years presents the following symptoms. Duration of illness 4 weeks. Severe pain in left thigh, worst at night. Daily fever: rapid pulse and rise of temperature. Increasing inability to use the limb; at last amounting to absolute and enforced rest in bed. Finally, delirium and a low, typhoidal state. No distinct history of injury.

The thigh becomes uniformly swollen and oedematous from the knee to the groin. It is hot and tender. There is an obscure feeling of fluctuation. Pulsation of the arteries in the leg and foot is not interfered with. The knee-joint is not swollen.

What is the probable nature of this affection? Prognosis; Sequelae; Treatment.

Case II. — A man of 55 years of age has a ragged ulcer on the side of the tongue, opposite the first molar tooth. Duration two months.

No injury. A moderate enlargement of the submaxillary gland on the affected side. What may this be?

In either case supposed, what is the prognosis, and the treatment?

THEORY AND PRACTICE. — Professor Minot.

1. Give the symptoms, causes, and treatment of Diphtheria.
2. Give the rational and physical signs, causes, and treatment of Apoplexy.
3. Describe the pathology, resulting symptoms, and course of Infantile Paralysis.
4. What are the rational and physical signs and treatment of Acute Lobar Pneumonia?
5. Give the symptoms, causes, and results of Endocarditis.
6. Give the rational and physical signs and treatment of Empyema.
7. Give the chief points necessary for the diagnosis and treatment of Intussusception in infants.
8. What are the symptoms, causes, and treatment of Inflammation of the Coecum or Appendix?
9. Give the symptoms and diagnosis of Rötheln (German measles).

CLINICAL MEDICINE. — Professors Minot and Edes.

[Give the differential diagnosis, the prognosis, and the treatment of as many of these cases as the time will allow, discussing them in the order in which they are arranged. Assume that symptoms not mentioned are wanting; but as omissions, intentional or not, may occur, state them, if essential. Success will depend more upon the quality than the quantity of the work. The intelligent discussion of the cases will have more weight than a hasty and inconclusive though correct diagnosis.]

Case I. — A lawyer, who had lived freely, 59 years old, noticed for several weeks that his urine was very copious. This was followed by dyspnoea on exertion, which gradually increased until he was compelled to give up all exercise. The next symptom was enlargement of the belly, which also increased until the patient's death, about six months from the time the first symptoms were observed. The following notes were made when he was first seen: Pulse 120, feeble; impulse of heart strong; near the left nipple is a systolic murmur; at left edge of sternum a systolic murmur is also heard, at about the first interspace, which is not prolonged into the carotids. Abdomen much distended, the cutaneous venous circulation developed; the upper part tympanitic, below the navel there is dulness on percussion and fluctuation, which varies with the position of the patient. The liver cannot be felt. There is considerable oedema of the feet and legs. There is much complaint of flatulence and constipation. The urine at one time had a sp. gr. of 1036, and showed a moderate amount of sugar; this afterwards disappeared. There was never any albumen or casts. No jaundice.

CASE II. — A man, aet. 43, passed a renal calculus seven years ago, and three years ago another. From about this time his strength has gradually failed, and a year ago he was obliged to give up work for some weeks, but partially recovered and worked, though with constantly increasing weakness, especially on slight extra exertion, until three weeks ago. He has had several short attacks of extreme weakness, but without actually fainting.

He is now of a dirty yellow color, with darker brownish streaks on the inside of the thighs, axillary folds, and in the neighborhood of some old superficial cicatrices. The conjunctivae are pearly white, the tongue and lips pale.

The only other abnormal signs to be discovered by physical examination are a strong systolic murmur heard loudest at the left edge of the sternum between the second and third intercostal spaces and diminishing rapidly in intensity as this centre is departed from, and a pulse of from 80 to 100 or more, regular, of moderate strength.

There has been some swelling of the feet.

The urine affords no special signs.

CASE III. — A lad, 19 years old, previously healthy, got much fatigued and wet. The next day he was seized with a pain in the left iliac fossa which soon spread to the whole of the lower part of the abdomen and was accompanied with vomiting. These symptoms became urgent, and required large doses of morphia. There was also much tympanites. When seen, two days afterwards, he had a good look, no pallor, tongue moist, nearly clean, mind clear. He complained of much pain in the belly, which was distended with gas, and only moderately tender. The respiration was thoracic. Pulse, 100, quite full. There was frequent vomiting, with very little pain, the vomitus consisting chiefly of bile. There had been two dejections, described as abundant, but probably containing but little more than enemata which had been given. He lay with the knees drawn up. The next day he was quite delirious, and all the symptoms were aggravated. Turpentine enemata had been given, but no flatus had come away. The pulse was 120, but quite full. There was frequent vomiting of green fluid. Subcutaneous injections of morphia had been frequently given.

Give the diagnosis, prognosis, and treatment.

CASE IV. — A woman, aet. 29, is said to have had phthisis and syphilis three years ago. She lost her voice at that time and never regained it. Recently she complained of weakness in the legs, general weakness, cough, and loss of appetite, slight palpitation and dyspnoea. A few days after there were found some dulness under the right clavicle, with an occasional slight sonorous râle on inspiration, and some moist râles at the base of the right lung.

She says that she is unable to walk and that she cannot stand without support. Sensation in the legs is unimpaired, and she complains of no pain in them. Cutaneous reflex is normal, and there is no increased tendon reflex. The muscles are rather flabby and they react rather feebly to the faradic current.

The laryngoscope reveals extensive but old ulcerations of the larynx. Her general appearance is that of health.

Soon after the use of strychnine she improved very rapidly, and in the course of a few days was able to walk quite well alone.

Fourth Year's Studies.

OPERATIVE SURGERY.—Assistant Professor Porter.

1. Describe the operation for excision of the elbow, name the parts especially to be preserved.

2. Describe ligature of the brachial artery at the bend of the elbow.

3. Describe amputation at the shoulder joint.

4. Describe tracheotomy.

5. Describe excision of the upper jaw.

OBSTETRICS.—Professor Reynolds.

1. Recount all the conditions which lead to prolapse of the funis during labor.

A primipara began to be in labor four hours ago. The head is engaged in the inlet. It is one hour since the membranes gave way. The os is one-third dilated, and is firm. Four inches of the cord, more or less, are felt in the vagina: pulsation in the cord is distinct. The mother's pelvis and the head of the child are normal.

How will you treat this case? What is the prognosis for the child?

2. A strong and vigorous woman is in labor for the fourth time. She has before given birth to three boys, all now living, and she had in each instance a hard confinement, though instruments were not required. The breech of this child, a male, is tightly wedged at the bony outlet of the pelvis, touching the perineum, but not making that bulge. In spite of strong expulsive pains no progress has been made for the past half hour. S. L. A. Both legs are straightened and carried up in front of the child. The beating of the foetal heart is at intervals irregular and tumultuous.

How shall help be given under these conditions?

3. A young woman, highly educated and of unusual mental endowment, has been employed in teaching till the date of her marriage, and was at that time in a state of marked anaemia: she is now seven months and one week advanced in her first pregnancy. The specific gravity of her urine is 1009: it contains a large amount of albumen, and shows numerous casts, both hyaline and granular. No clinical feature which belongs to severe albuminuria is wanting in her case.

What symptoms will you obtain by inspecting this patient and questioning her?

Lay down rules for the guidance of the case.

4. Describe a case of phlegmasia dolens; and direct appropriate treatment.

CLINICAL AND OPERATIVE OBSTETRICS.

Assistant Professor Richardson.

1. What is the least conjugate diameter of the pelvic brim through which it is possible to deliver a living child at full term?

2. When are forceps contra-indicated?

3. What would lead you to diagnosticate the death of the foetus in utero at the middle of the seventh month — the mother not being in labor?

4. A primipara has been six hours in the second stage of labor. The head has passed through the superior pelvic strait and remains, unimpacted, high up in the pelvis. The posterior fontanelle can with difficulty be reached at the right sacro-iliac synchondrosis; the anterior fontanelle can be easily felt near the left foramen ovale. The woman begins to show signs of exhaustion. Treatment?

5. A primipara, eight and a half months pregnant, has had within six hours eleven convulsions. No urine has been passed for eight hours. The bladder contains half an ounce of urine containing a large amount of albumen and numerous granular and hyaline casts. The patient is lying unconscious and there are no signs of labor. Treatment?

OPHTHALMOLOGY.—Professor Williams.

Describe: —

1. Symptoms and treatment of ophthalmia neonatorum.
2. Causes and course of sympathetic ophthalmia.
3. Pathological conditions resulting from trachoma.
4. Symptoms of keratitis resulting from inherited syphilis.
5. Treatment of obstructions of lachrymal passages.

DERMATOLOGY.—Professor White.

[Students may select five questions.]

1. Describe the anatomy of the sweat glands.
2. Describe the tissue changes in the pustule.
3. What are the clinical varieties of erythema?
4. Etiology of herpes?
5. Describe the principal varieties of eczema.
6. Treatment of acne?
7. Pathological anatomy of Elephantiasis Arabum?
8. Pathology of leucoderma?
9. Causes of alopecia?
10. Treatment of the vegetable parasitic affections?

GYNAECOLOGY.—Assistant Professor Baker.

1. What is the anatomy of the mucous membrane of the uterus?

2. What are the causes of laceration of the cervix; and what the symptoms, physical signs, differentiation, results, prognosis, and treatment?

3. Of what significance is leucorrhoea as a symptom?

DISEASES OF CHILDREN.—Drs. Oliver and Rotch.

1. Give the differential diagnosis of tubercular meningitis.

2. What are the objections to giving starchy food to an infant two months old?

3. How would you distinguish between catarrhal laryngitis and membranous laryngitis?

4. Give the symptoms, course, and treatment of acute intestinal catarrh.

5. Give some of the principal causes of infantile eclampsia.

6. How would you distinguish between scarlet fever, measles, and varicella?

DISEASES OF THE NERVOUS SYSTEM.

DRS. WEBBER AND PUTNAM.

[N. B. — It will be considered sufficient to have answered any four of these eight questions.]

1. Give the symptoms and treatment of chorea.

2. What are the causes and treatment of neurasthenia?

3. Give the principal general symptoms of cerebral tumor.

4. What symptoms would be diagnostic of a lesion of one side of the Pons Varolii?

5. What changes occur in the electrical reaction of muscles and what is their value in diagnosis?

6. What are the early symptoms of caries of the vertebrae?

7. In the following case give diagnosis of location of lesion and its nature, with reasons.

8. Give prognosis and treatment.

The patient is a laborer, 60 years old, early and family history unimportant. On morning of the attack he had headache; about noon was dizzy; this increased till night. He worked a while in the afternoon, but was soon compelled to give up and started for home. He fell and lay on the ground an hour with at most only temporary loss of consciousness. At that time he lost the use of his left hand and arm, perhaps the leg was affected, the next day it certainly was.

On examination the day after the attack there was a slight loss of tone on the left side of the face; when the facial muscles were called into action there was a slight difference between the two sides, the right acting the more vigorously. The eyes moved naturally, without difference in pupils; tongue was protruded straight; left arm and hand could not be moved; in left leg there was almost entire loss of power; sensation was diminished on left, not abolished. He spoke very indistinctly, so that it was not easy to understand him; no words miscalled. Area of cardiac dulness not increased; no murmur with heart sounds, which were indistinct and muffled; pulse small and weak, of normal frequency. Temperature, day after attack, normal; varied afterwards between normal and half a degree below. A trace of albumen in urine and a few hyaline casts. Five or six days later he could raise his hand to the top of his head and could draw up his legs.

MENTAL DISEASES. — ASSISTANT PROFESSOR FOLSOM.

1. Describe an insane delusion; an illusion; an hallucination.

2. What are the pathological evidences of general paralysis in the brain? in the spinal cord? in the membranes?

3. What are the indications for treatment in general paralysis? in acute melancholia? in acute mania?

4. Describe a case of insanity of persecution with depression.

5. What is primary dementia? secondary dementia? and what is the prognosis in each?

6. What is moral insanity?

LARYNGOLOGY.—ASSISTANT PROFESSOR KNIGHT.

[N. B.—Each student is expected to answer two of the four following questions.]

1. What muscles open the glottis? What muscles close it? What muscles stretch the vocal cords? What nerves supply each of these muscles?

2. Give the principal points in diagnosis between syphilitic and tubercular ulceration of the larynx by the laryngoscope.

What treatment would you recommend for syphilitic ulceration of the larynx?

3. Papilloma of the larynx. Appearances. Indications for operatic interference. Best methods of operating. Liability to recurrence.

4. Symptoms and laryngoscopic appearances in carcinoma of the larynx. What variety of cancer is most commonly found here? With what diseases might it be confounded? What treatment would you recommend in a case of carcinoma of the larynx? What have been the results of extirpation in this affection?

OTOLOGY.—DRS. GREEN AND BLAKE.

1. Enumerate and describe the sound transmitting structures of the middle ear.

2. Describe the appearance of the normal membrana tympani on inspection.

3. In a case of severe inflammation of one tympanum which has continued for ten days without discharge from the ear, inspection shows the membrana tympani to be red, swollen, and bulging outward in its posterior inferior quadrant, there is local pain, a sensation of throbbing, and violent subjective noise; there are no complications. Describe the appropriate treatment, minutely, to recovery, supposing the case to progress regularly.

4. What are the possible permanent injuries to the structures of the middle ear from acute purulent inflammation?

FORENSIC MEDICINE.—DR. DRAPER.

1. What is adipocere; and what conditions especially favor its formation?

2. What are the signs of rape upon a young woman, previously a virgin and in good health?

3. What is the usual cause of death in fatal cases of "criminal abortion," so-called?

4. In a case of death by poison, what parts of the dead body should be sent to the chemist, and what precautions should be observed in their preservation and transmission for analysis?

VENEREAL DISEASES.—Dr. Greenough.

I. How does a patient acquire (*a*) a case of gonorrhoea; (*b*) chancroids; (*c*) syphilis? State the vehicle which carries the virus, and also what factors are necessary to produce infection.

II. What complications may occur in a case of gonorrhoea in the male subject?

III. What symptoms in a case of gonorrhoea would contra-indicate the use of astringent injections?

IV. What is, or may be, the condition of the inguinal lymphatic glands (*a*) in gonorrhoea; (*b*) chancroids; (*c*) syphilis?

V. Describe, and differentiate between, the lesions of (*a*) herpes progenitalis; (*b*) chancroids; primary syphilitic lesions, *i. e.* indurated chancres.

VI. Describe a typical case of secondary syphilis, beginning with the first symptoms of constitutional infection.

VII. What symptoms would cause you to discontinue a mercurial course of treatment?

VIII. Describe the pathological process which results in the later, or tertiary, deep ulcerations of the cutis, or mucous membranes in syphilis.

ADMISSION EXAMINATION PAPERS.

LATIN.

Translate: —

His rebus auditis, Cimbri castris egressi ad pugnam prodierunt. Marius aciem ita instituit, ut pulvis in oculos et ora hostium ferretur. Incredibili strage prostrata est illa Cimbrorum multitudo. Caesa traduntur centum octoginta hominum millia. Nec minor cum uxoribus pugna, quam cum viris fuit: illae enim objectis undique plaustris altae desuper, quasi e turribus, pugnabant lanceis contisque. Victae tamen legationem ad Marium miserunt libertatem orantes, quam quum non impetrassent, suffocatis elisisque infantibus, aut mutuis concidere vulneribus, aut vinculo e crinibus suis facto, ab arboribus jugisque plaustrorum subjectis pependerunt. Ferunt unam conspectam fuisse, quae pedibus suis duos filios, seipsam vero ex arbore, suspenderat.

Hunc vitae finem habuit juvenis clarissimus quidem, sed quem sua semper inquietum ac turbulentum fecerat ambitio: ipse queri solitus est 'sibi uni, ne puero quidem, ferias unquam contigisse;' nam, adhuc praetextatus, per ambitionem coepit reos judicibus commendare. Laudantur tamen Drusi quaedam facta dictaque; quum Philippo consuli insidiae pararentur, ejusque vita in maximo esset periculo, Drusus, re cognita, Philippum, licet inimicum, monuit ut sibi caveret. Exstat etiam Drusi

vox egregia: quum enim domum aedificaret, promitteretque architectus, 'si quinque talenta sibi darentur, ita se eam aedificaturum, ut nemo in eam despicere posset:' "Imo," inquit Drusus, "decem dabo, si eam ita componas, ut quidquid agam non a vicinis tantum, sed ab omnibus etiam civibus possit perspici."

FRENCH.

Translate:—

SOUVENIRS D'ENFANCE.

Après dix ans je vous revois,
Vous que j'aimais toute petite;
Oui voilà bien les yeux, la voix
Et le bon cœur de Marguerite.
Vous m'avez dit: "Rajeunissons
Ces souvenirs pleins d'innocence."
Ah! j'y consens, recommençons
Un des beaux jours de notre enfance.

Téniers réunit tous les tableaux qu'il avait achevés depuis plusieurs mois; il les disposa dans son atelier, ayant soin de les placer dans le jour le plus favorable; puis il annonça, dans la ville d'Anvers, qu'il allait faire une vente générale de tous ses ouvrages. Un grand nombre de curieux se présentent, et regardent tout minutieusement, sans avoir l'intention de rien acheter. Les marchands de tableaux, qui voient dans la pauvreté du peintre l'occasion d'un bon marché, cherchent à faire baisser les prix par les critiques les plus amères. "Quoi!" dit l'un d'eux, "ce n'est que cela! c'était bien la peine de nous faire venir pour si peu de chose! Je vous offre cent pistoles de la collection."—"Je ne la donnerais pas pour mille," s'écrie Téniers avec indignation.—"Apparemment vous vous croyez un talent de premier ordre; mais apprenez qu'il y a cent peintres comme vous dans la Belgique."—"Que ferons-nous," dit un autre marchand d'un air encore plus ironique, "de tous ces tableaux grotesques qui semblent tous jetés dans le même moule? d'abord, on n'en veut plus en France, et, depuis que le roi vous y a traité assez rudement, comme vous savez, il n'y a pas un homme de cour qui souffre un Téniers même dans son anti-chambre."—"C'est possible," dit le peintre cherchant à dissimuler son dépit, "mais il nous reste l'Allemagne, l'Angleterre et notre pays."—"En conscience," reprend le marchand, "pourquoi cultivez-vous un pareil genre?"—"Parce que c'est le seul dans lequel je puisse réussir."—"A la bonne heure; mais pourquoi ne pas mettre un peu plus de dignité dans vos personnages? Voyez, par exemple, dans cette fête flamande qui est devant nous, ce paysan ivre qui essaie de danser; est-il possible d'avoir l'air plus gauche et plus lourd? c'est d'une vérité triviale, dégoûtante; on croit le voir, en vérité, et cela n'a pas l'air d'un tableau."—"Je croyais que la vérité et le naturel." . . .—"Non, non! il faut de l'idéal dans les arts."—"Je serais de votre avis, si j'avais à peindre des dieux ou des héros, ou bien encore un tableau d'église; je serais poëte alors, mais ici je suis historien: je peins ce que je vois. De grâce, l'idéal est-il à sa place dans une scène de cabaret? Ah! croyez-moi, messieurs, si le temps n'efface pas mes couleurs, et si la postérité s'occupe un peu de moi, elle dira: Il fut naturel

et vrai; et cet éloge en vaudra bien un autre."—"La postérité dira ce qu'elle voudra," répond brusquement le marchand; "mais moi, votre contemporain, je vous offre encore une fois cent pistoles de la collection." —"J'aimerais mieux la brûler ou la donner pour rien." En parlant ainsi, Téniers congédie les amateurs, et déclare que la vente n'aura pas lieu.

GERMAN.

Translate:—

1. Scene.

Hortenſe (tritt links ein, in eleganter Balltoilette;—in der Hand ein Logenbillet auf farbigem Papier).

O tückiſches Schickſal! — Heute Abend iſt Ball — und im Opernhauſe zugleich Meyerbeer's „Afrikanerin," wozu man mir galanter Weiſe ein Logenbillet durch die Stadtpoſt überſendet! — Was nun thun? — Die Afrikanerin mit der Lucca und Wachtel — das iſt Reiz genug: — aber mein Ball? — Die Manen Meyerbeer's mögen es mir verzeihen. — Vielleicht vor einer Stunde noch hätte er geſiegt — jetzt iſt es zu ſpät und Terpſichore triumphirt. (Sie wirft das Billet leicht gefaltet zur Erde). Armer Nordheim — für heute ſteht es in den Sternen geſchrieben, daß es nichts iſt mit Ihrem Plauder-Stündchen. Zwei mächtige Feinde ſind wider Sie verbündet, Meyerbeer und ein Ball. — Wer weiß, ob meine Gutmüthigkeit nicht am Ende ſoweit gegangen wäre, die Afrikanerin im Stich zu laſſen — aber dieſe Toilette, dieſe neue Pariſer Coiffure — letzte Mode — die heute Furore machen ſoll — auf dies Alles zu verzichten, aus Rückſicht für die Gewohnheiten eines alternden Junggeſellen — dieſe Opferfähigkeit wohnt in keinem Frauenherzen — in dem meinigen wenigſtens zu allerletzt. — Doch es wird ſpät — ich darf nicht länger ſäumen — Juſtine! — Mein Bouquet! (Links ab).

2. Scene.

Nordheim (tritt lebhaft ohne zu klopfen rechts ein und legt ſeinen Hut und Ueberzieher auf den Fauteuil rechts vom Fenſter).

Dies bin ich, Hamlet der Däne! (Sich umwendend). Pardon, daß ich ohne zu klopfen eintrat, — allein die tägliche Gewohn — Niemand hier? — (Erſchreckt). Sie wird doch nicht gar — nein, das iſt nicht möglich — ſie darf nicht ausgegangen ſein — was würde denn ſonſt aus meinem Plauder-Stündchen? — (Das Logen-Billet bemerkend und aufhebend). Was iſt das? — Ha — ein Billet, eine Loge für heute Abend — ich konnte es nicht auffangen, wie alle die übrigen — es iſt mir entſchlüpft. (Er zieht einige ähnliche Billets aus der Taſche). Doch nur Ruhe! — Wie ich ſehe iſt dies Billet zerknittert, — man hat es alſo fortgeworfen — man hat es verſchmäht — man hat mir ein Opfer gebracht — ich triumphire! — (Er läßt das Papier wieder fallen). Schon der Gedanke an mich hat den Sieg für mich entſchieden — ich bin alſo weit größer als der ſelige Cäſar, der ſich erſt die Mühe nehmen mußte zu kommen und zu ſehen, um zu ſiegen. (Die Handſchuhe bemerkend). Ah, ſieh da — Ballhandſchuhe! (Muſtert ſie). Und wie niedlich! Sollte man glauben, daß es Händchen gäbe, die dahinein paſſen? — (Den Brief bemerkend). Was iſt denn das? — (Nimmt ihn). „Ew. Hochgeboren — einzuladen — Familienball — am

20. Februar — Ergebenſt — Gräfin Villange" — Teufel! — Alſo darum ward die Loge ſo großmüthig verſchmäht! — Auf den Ball will ſie gehen — ſich die Cour machen laſſen — tanzen — kokettiren — nein, das gebe ich nicht zu. Das muß ich verhindern, einerlei auf welche Art. — Hoffentlich wird mir ja noch ein Mal glücken, was ich ein ganzes Jahrlang erfolgreich durchgeſetzt habe. — (Geht ſchnell rechts ab, Hut und Paletot mitnehmend).

3. Scene.

Hortenſe (tritt links wieder auf, fertig zum Ausgehen. Zurück ſprechend).

Schnell den Wagen vor, — Hurtig, Juſtine! — (Vorkommend). Wenn nur Nordheim nicht etwa gar früher kommt, als ſonſt. — (Kokett, ſich ſpiegelnd). Hm! — Zwar — ich wünſchte faſt, daß er mich einmal ſo erblicken möchte, — aber es würde ſchwer ſein, ihm zu entſchlüpfen. — Er wird ganz außer ſich gerathen! — Faſt könnte ich ihn bedauern! — Aber wiederum muß ich lachen über ſein beſtürztes Geſicht, wenn er mich ausgeflogen findet! — (Es klopft rechts). Mein Himmel! — (Nach der Uhr ſehend). Ah — die Uhr ſteht ſtill — es muß ſpäter ſein als ich dachte! — Er iſt es! — (Erneuetes Klopfen). Ah! — Was thun? — Courage! — Ich werde ihm ſagen, ich ſei Herrin meiner Zeit, und könne kommen und gehen, wie es mir beliebt. (Drittes Klopfen. Hortenſe verdrießlich). Herein! —

PHYSICS.

1. Show that the space passed over by a body moving for any time with a uniform velocity is equal to the velocity multiplied by the time.

2. If a stone be dropped from the top of a cliff what velocity will it acquire under the action of gravity in one second? In t seconds?

3. Explain the ascent of a rocket.

4. State the law of universal gravitation.

5. What does the word *elasticity* denote? What is *limit of perfect elasticity?*

6. Name some of the varieties of visible or mechanical energy, both kinetic and potential.

7. What is the nature of sound waves?

8. Why is it necessary to fix upon a standard temperature in comparing the specific gravities of substances? What is this standard?

9. Into what two distinct classes are substances divided with reference to their effect upon light?

10. Show by an experiment that there are two kinds of electricity, and give their names.

GEOMETRY.

I. 1. Define a parallelogram, a polygon, a circle. 2. Name and describe the three sorts of triangles according to their angles. 3. Define a scalene triangle. 4. Define a rhomboid. 5. How would you divide a straight line AB into 2, 4, 8, 16, &c., equal parts?

II. 1. Construct a triangle which shall be equal and similar to another triangle $A\,B\,C$. a) the 3 sides of $A\,B\,C$ being given; b) the side $B\,C$ and the two adjacent angles B and C being known. 2. Construct an isosceles triangle upon a given line $A\,B$. 3. Construct a square in and about a circle. 4. The 4 sides and 1 angle of a quadrilateral being given, it is required to construct the quadrilateral.

III. 1. Show that two vertical angles are equal one to the other. 2. Show that two triangles are equal if two angles and the interjacent (lying between) side of the one are equal to the two angles and the interjacent side of the other each to each. 3. Show that if two angles of a triangle are equal, the sides opposite those angles are also equal. 4. Show that every parallelogram ($A\,B\,C\,D$) is divided by a diagonal $D\,B$ into two equal triangles. 5. Show that two parallelograms having the same or equal bases and an equal altitude, are equivalent.

IV. 1. Prove that the square constructed upon the hypothenuse of a right-angled triangle is equal to the sum of the squares constructed upon the other two sides. 2. Show that the area of a regular polygon may be found by multiplying its perimeter by half the radius of the inscribed circle.

V. 1. Show that a straight line drawn from the centre of a circle to the middle of a chord in the same circle is perpendicular to that chord, and bisects the arc subtended by that chord and the angle at the centre measured by the arc. 2. The angles made by a tangent and a chord drawn from a point of contact are equal to the angles inscribed in the alternate segments of the circle. 3. How can you construct a hexagon within a circle, and upon what proposition does this depend?

ALGEBRA.

[All the work is to be preserved.]

I. Reduce $a + b - (2\,a - 3\,b) - (5\,a + 7\,b) - (-13\,a + 2\,b)$ to its simplest form.

II. 1. Find the continued product of $5\,a^3$, a^7, $7\,a^5$, and $3\,a^6$.

2. Multiply $8\,a^6b^4$ by $12\,a^2b^3c\,d^2$.

3. Multiply $a^3 + b^2 - c$ by $a^2 - b^3$.

III. 1. Divide $144\,a\,b^3c^2d^8e$ by $-112\,a\,b^4c\,e^7h$.

2. Divide $-3\,a^m$ by $2\,a^{m+n}\,b\,c^{-1}$.

3. Divide $1 - 18\,z^2 + 81\,z^4$ by $1 + 6\,z + 9\,z^2$.

IV. Find the greatest common divisor of $75\,a^3b^8cd^{11}ex^9$ and $50\,a^3c^2d^{11}x^5$.

V. Reduce to one fraction $\frac{a}{x} - \frac{b}{x^2} + \frac{1}{x^3}$.

VI. Put the following problem into an equation. A person had a certain sum of money before him. From this he first took away the third part and put in its stead \$50. A short time afterwards, from the sum thus increased he took away the fourth part and put in its stead \$70. He then counted his money, and found \$120. What was the original sum?

VII. "All my journeyings taken together," says a traveller, "amount to 3,040 miles; of which I have travelled $3\frac{1}{2}$ times as much by water as on horseback, and $2\frac{1}{3}$ times as much on foot as by water." How many miles did he travel in each of these three ways?

VIII. *A* says to *B*: "Give me $100, and I shall have as much as you." "No," says *B* to *A*, "give me rather $100 and then I shall have twice as much as you." How much does each have?

ENGLISH.

1. Write an English composition (such as a letter, a description of a place, etc.), of not less than two hundred words.

2. Write from dictation (ten minutes).

3. Spell the following words, — acquaintance, embarrass, agreeable, inflammation, receive, circuit.

A fair knowledge of grammar and spelling will be required.

BOTANY.

1. Name and describe the parts of a flower.

2 and 3. Describe (and sketch if you can) two of the following-named plants: —

Buttercup (*Ranunculus bulbosus*); Sugar-maple (*Acer saccharinum*); Wistaria (*W. frutescens*); Apple (*Pyrus malus*); Apple of Peru [Jamestown weed] (*Datura stramonium*); Castor-oil bean (*Ricinus communis*); Mountain-laurel (*Kalmia latifolia*); Indian Corn (*Zea Mays*).

*4. What edible plants in the orders *leguminosae; rosaceae; graminaceae; solanaceae; ericaceae; cucurbitaceae?*

*5. What medicinal plants in the orders *solanaceae; umbelliferae; ranunculaceae; papaveraceae; rubiaceae; euphorbiaceae?*

* Answer three out of the six.

A

DESCRIPTION OF THE NEW BUILDING,

WITH

WOODCUTS OF THE EXTERIOR AND FLOOR PLANS.

A DESCRIPTION

OF

THE NEW BUILDING ERECTED FOR THE MEDICAL SCHOOL OF HARVARD UNIVERSITY.

THE HARVARD MEDICAL SCHOOL begins the second century of its existence with the occupation of a new building. This was rendered necessary by the growth of the school and the needs of the advanced system of education, which it has been so instrumental in promoting. The collection known as the Warren Museum of Anatomy had outgrown the space provided for it, and had become too valuable to be allowed to remain in a structure in which the risk from fire was so great as in the one now occupied. These facts were appreciated by the public, and the building has been erected and equipped solely by generous subscriptions amounting in all to nearly three hundred thousand dollars.

In order to secure for each student that direct personal supervision and instruction, forming such a marked feature of the courses offered, especially in the thorough laboratory training, which is so essential in securing a broad foundation for future clinical work, larger and better equipped rooms were required than could be obtained in the old school-building. A comparison of the plans with their detailed description will give a clear appreciation of the facilities afforded to the departments of anatomy, physiology, and chemistry, and of the carefully arranged rooms for the lectures on therapeutics, materia medica, and those branches of medicine and surgery which can be taught away from the bedside of the patient.

The comfort and convenience of the students have been carefully considered, as will be seen from the ample provision made for a study, coat-room, smoking-room, and lavatories.

The building is situated in Boston, at the corner of Boylston and Exeter Streets, in that part of the city which is destined to be its educational centre. It is at nearly equal distances from the Mass.

General Hospital, the City Hospital, the Boston Dispensary, and the Children's and Women's Hospitals, with their rich stores of clinical material available for the purposes of teaching. The adjoining lot has been offered to the city by the State, for the Public Library; while in close proximity are the Mass. Institute of Technology, the Museums of the Society of Natural History and of Fine Arts, the Medical Library Association, churches of all denominations, other public buildings, and gymnasiums. Students can obtain board and lodgings in very desirable localities near at hand, while the suburbs are made easily accessible by frequent trains on the Providence and Albany Railroads.

The corner position, and the reservation of a large open area on the east, will always insure good light and air to the building, which has a frontage of one hundred and twenty-two feet towards the north on Boylston Street, and of ninety feet towards the west on Exeter Street. It is handsomely built of brick, trimmed with stone and terra cotta. Panels of the latter material, inscribed with the names of men great in the annals of medicine, are placed in the façade. In the interior, the material used and the plan of construction are those which the experience of the present day has shown to be the best proof against fire.

Heating and ventilation are accomplished by means of large stacks of steam radiators, which warm the fresh air as it passes over them to be distributed throughout the building. The air is removed by a series of flues connecting with a central shaft in which an upward current is maintained by means of heated coils of pipe. An additional amount of direct heat is furnished by small radiators placed in each room.

Both hot and cold water are supplied wherever needed, and the entire building is abundantly lighted with gas.

The plan, in general, is that of a large central hall, lighted from above, containing the main stairway, about which the different rooms are grouped. Adjoining this are two brick wells extending from the cellar to the roof. In one of them is a stairway giving access to the instructors' rooms, and which can be used as a fire-escape if necessary. In the other is the elevator for passengers and freight, with doorways opening at the several landings of the stairways, and others communicating with the various rooms connected with the laboratories and lecture rooms. Four floors and a basement are required for the various rooms.

The main entrance to the building is into the central hall from Boylston Street. On the left or easterly side is an archway leading to a window opening into the janitor's apartments (first floor plan, A), where letters and packages for the students are received, and where bells and speaking-tubes connecting all parts of the building unite.

From the southeast corner of the central hall opens the students' reading-room (first floor plan, C), having an area of about sixteen hundred square feet, and amply provided with tables for reading and writing. Connected with this, as well as with the south side of the hall, is a smaller room (first floor plan, D) where conversation and smoking will be allowed.

Leading from the janitor's window to the reading-room is a narrow corridor, from which the students' lavatories, &c., in the basement are reached, while the remainder of the latter is used for the heating apparatus and storage. The coat-room (first floor plan, B) also opens from this entry.

A large room and adjoining ante-room (first floor plan, F & E), have not been especially assigned as yet, but will be used for lectures or recitations as occasion may require.

Occupying the centre of the westerly side is the room for the general library (first floor plan, G), with ample space for its valuable medical classics and the more recent books which are added from time to time. Next to this on the north is the room for the faculty (first floor plan, H), where its meetings will be held and the school records preserved.

A broad flight of stairs leads to the second floor, which is entirely devoted to the departments of physiology and chemistry, with their laboratories and lecture-room. The physiological laboratory (second floor plan, A) occupies a space forty by thirty feet in the centre of the eastern side. It will be provided with the most approved apparatus for illustrating lectures and for students' use. Opening into the laboratory on the north are rooms for the professor and his assistants, as well as one especially fitted for chemical manipulation. Adjoining the laboratory on the west is a room for the mechanic (second floor, A′) who takes care of the laboratory and makes needed repairs. Above is a room for a special library and study for the department. The laboratory is directly connected with the lecture-room (second floor plan, B), beneath the seats of which are rooms for special and optical experiments.

The chemical department occupies the entire western side of this floor. The large laboratory, having over two hundred desks, is divided to accommodate the classes in general and medical chemistry (second floor plan, D & E), and will be provided with spacious hoods, steam-baths, and all modern apparatus. The room for the professor is on the south, opening into the laboratory on one side and into a preparation-room (second floor plan, C) adjoining the lecture-room on the other. Special analyses will be conducted in the half-story over C and the adjoining rooms. The laboratory assistants' room, from which supplies of chemicals and apparatus will be distributed to the students, is situated upon the north side (second floor plan, F). An assistant will be at hand to aid students in the laboratory throughout the day.

The students' entrance to the lecture-room (second floor plan, B) is from a landing half-way between the second and third floors. This room, which will accommodate about two hundred persons, is furnished with raised seats, planned after a careful comparison of the most approved models. A large blackboard and screen for diagrams are placed against the wall.

The third floor contains the amphitheatre for the lectures on anatomy and surgery, the Warren Anatomical Museum, and two large rooms for medical lectures and recitations.

The seats of the amphitheatre (third floor plan, B) are arranged in the manner implied by the name, for the purpose of giving each student an unobstructed view of the demonstrations. The same general model of seat has been used here as in the room below, but so modified as to meet the special requirements of the teaching. The room is thirty feet in height and lighted from above as well as from the sides, and will accommodate about three hundred students.

On the south side are the rooms for the professor and demonstrator of anatomy (third floor plan, C); while connecting with the floor of the amphitheatre by a short passage are the rooms for the surgical department (third floor plan, B′) and curator of the museum (third floor plan, A′). Direct access to the museum is also to be had from the floor of the lecture-room.

The room intended for the Warren Anatomical Museum (third floor plan, A) extends eighty feet along the north side of the building, is forty feet in width, and has a height of eighteen feet. The collection is placed in cases against the wall and in alcoves, divided into two tiers by a light gallery extending round the room. The cases themselves are handsomely made in the manner best adapted to prevent the entrance of dust and insects. Valuable illustrations are furnished for the systematic lectures on normal and pathological anatomy, surgery, and medicine by the specimens, which number over seven thousand. The museum is opened at stated times, and access for the purposes of study can always be had upon application.

The two lecture-rooms (third floor plan, D & E) opening from the westerly side of this floor are especially intended for exercises which do not require extensive demonstration or experiment. The seats are placed on the floor level, while the lecturer occupies a raised platform, behind which are the screen and blackboard. Separating these, but connecting with both, is an ante-room (D′) where diagrams and other illustrations can be kept.

In the southeast part of the fourth floor two large doorways give access to the upper part of the amphitheatre, and it is through these that the students enter. (Fourth floor plan, B.)

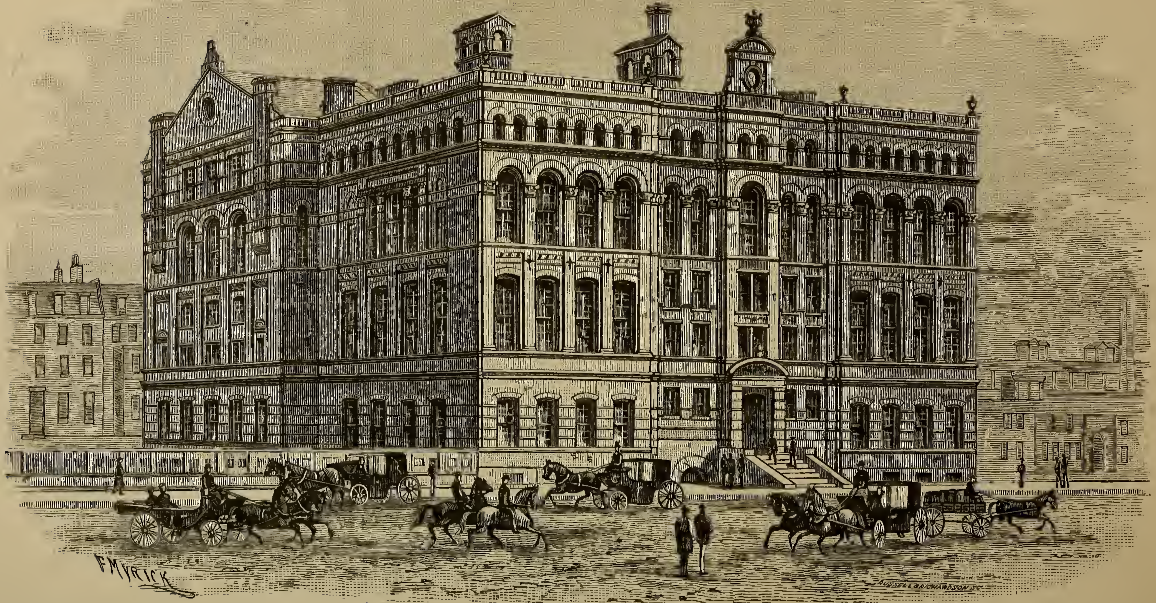
Occupying two thirds of the western side of this floor is the room for practical anatomy (fourth floor plan, E). Large skylights give abundant direct light upon the tables for classes, while the windows lining the sides of the room serve the same purpose for special students working at benches placed beneath. Boxes for books, instruments, &c., with separate lock and key for the students' use, are placed against the wall.

A small amphitheatre (fourth floor plan, D) opens from this. Here operative courses in surgery and obstetrics will be held and special demonstrations given. In close proximity are the rooms for the demonstrator and his assistants (fourth floor plan, C), one of whom will always be at hand to aid students.

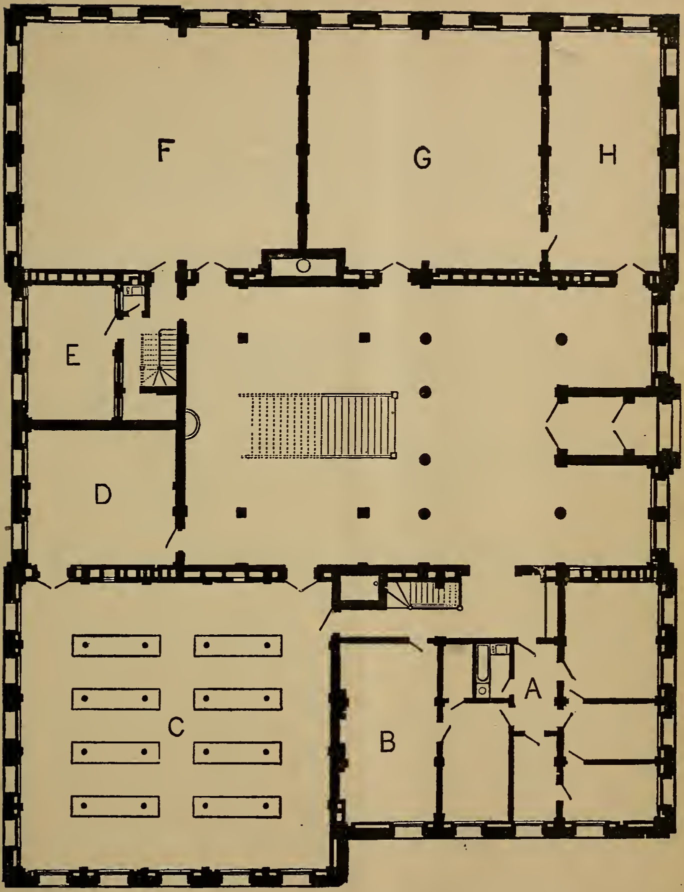
The pathological laboratory is entered from the northeast corner of the building (fourth floor plan, A). It has been arranged with special reference to the exhibition of recent morbid specimens and for microscopical work. A private stairway leads to the museum, so that specimens for comparison or illustration can always be easily obtained. A series of continuous tables occupy the centre of the room, along which specimens can be passed for inspection after they have been demonstrated. The height of the tables has been regulated with special reference to the use of microscopes, as the classes in normal and pathological histology will also work here. Placed beneath the windows are tiers of boxes, where the instruments are to be kept. Two large open sinks are provided for general use, and one, smaller and covered with a hood, for use in demonstrations.

Four smaller rooms (fourth floor plan, A′) connect with this laboratory, where advanced students or graduates can make special investigations under the direction of the professor of pathological anatomy.

From this brief description it will be seen that facilities are offered to the student for the thorough study of medicine in all its branches. The new laboratory arrangements are not excelled in this country, and the well-appointed rooms for lectures and recitations afford every means for the collection and display of illustrations. These greatly increased conveniences for laboratory and didactic instruction are supplemented by the numerous and varied opportunities for the observation and study of clinical cases, so amply provided at the different general and special hospitals and dispensaries.

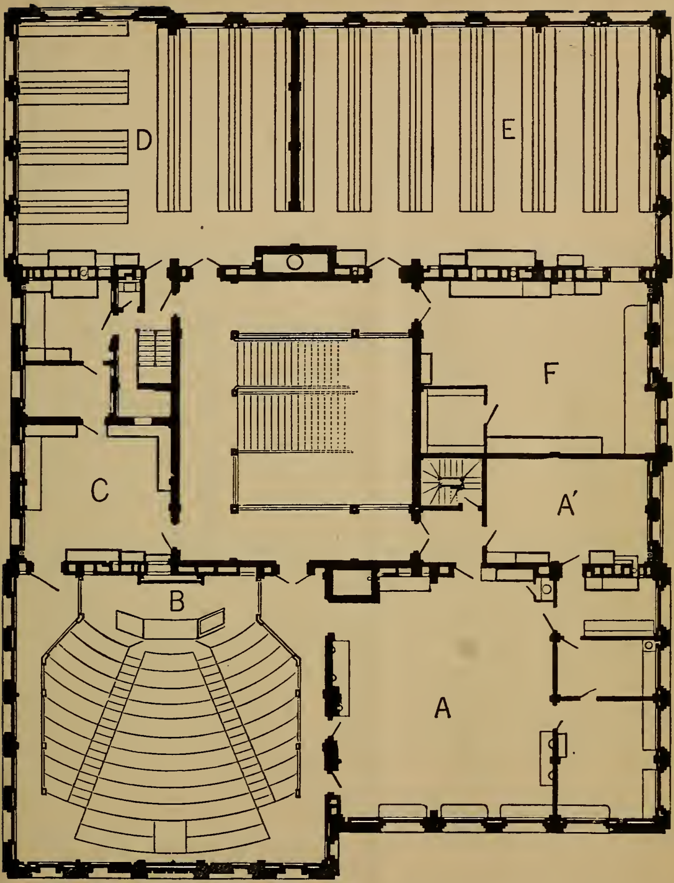


THE HARVARD MEDICAL COLLEGE.



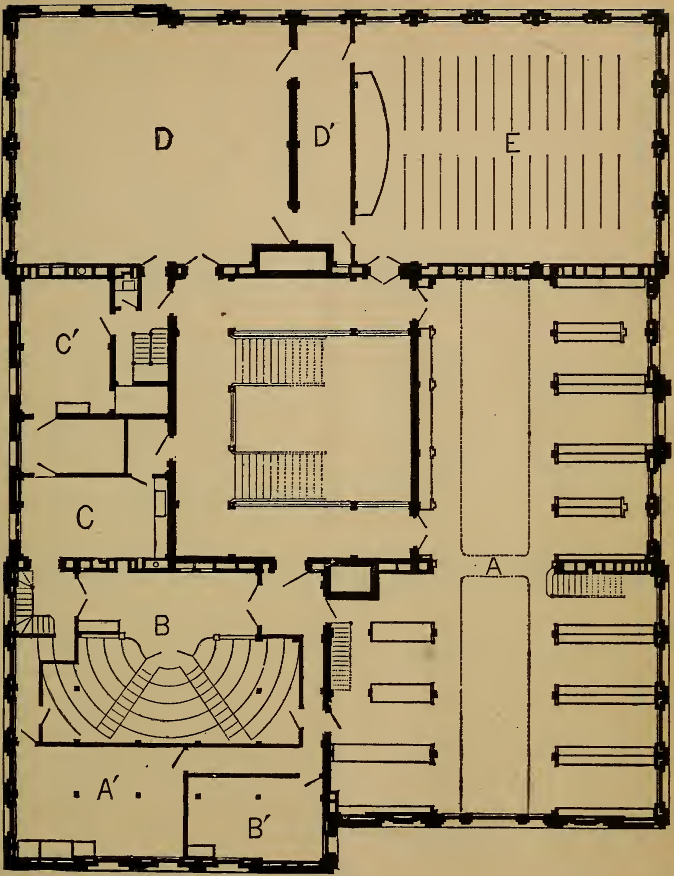
FIRST FLOOR.

A — Janitor's apartments.
B — Coat-Room.
C — Reading-Room.
D — Smoking-Room.
E — Ante-Room.
F — Lecture-Room.
G — Library.
H — Faculty-Room.



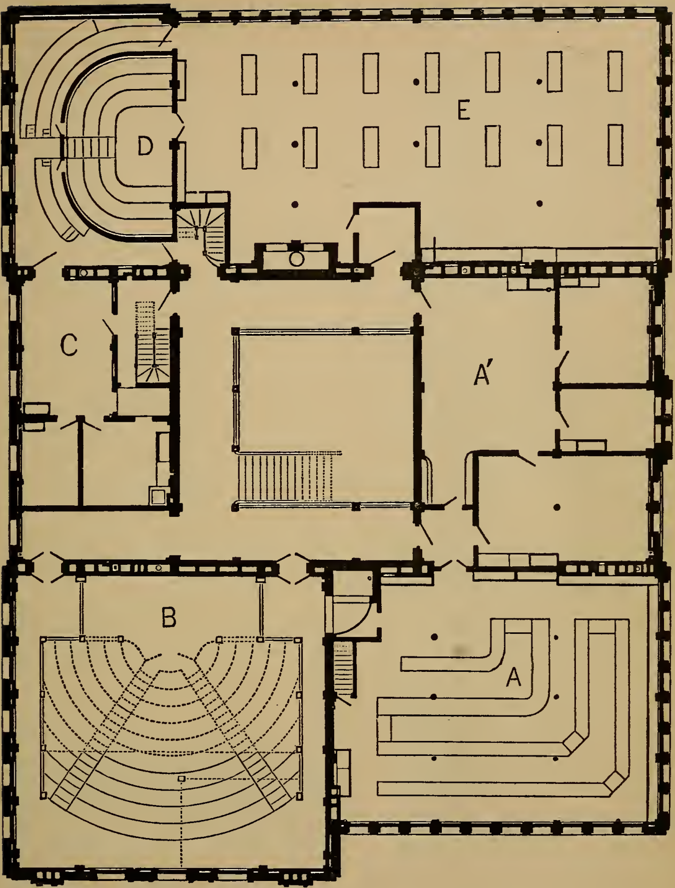
SECOND FLOOR.

A — Laboratory, Physiology.
A′ — Mechanic's Room.
B — Lecture-Room.
C — Ante-Room, Chemistry.
D — Laboratory, Medical Chemistry.
E — Laboratory, General Chemistry.
F — Chemical Supply-Room.



THIRD FLOOR.

A — Museum.
A′ — Curator's Room.
B — Amphitheatre.
B′ — Ante-Room.
C — Demonstrator's Room.
C′ — Demonstrator's Room.
D — Lecture-Room.
D′ — Ante-Room.
E — Lecture-Room.



FOURTH FLOOR.

A — Laboratory, Pathological Anatomy and Histology.
A′ — Laboratory, Experimental Pathology.
B — Amphitheatre, Upper Half.
C — Ante-Rooms, Anatomy, Surgery, and Obstetrics.
D — Amphitheatre, Operations and Demonstrations.
E — Practical Anatomy.